United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
Massachusetts Agricultural
Experiment Station

Soil Survey of Middlesex County, Massachusetts

How To Use This Soil Survey

General Soil Map

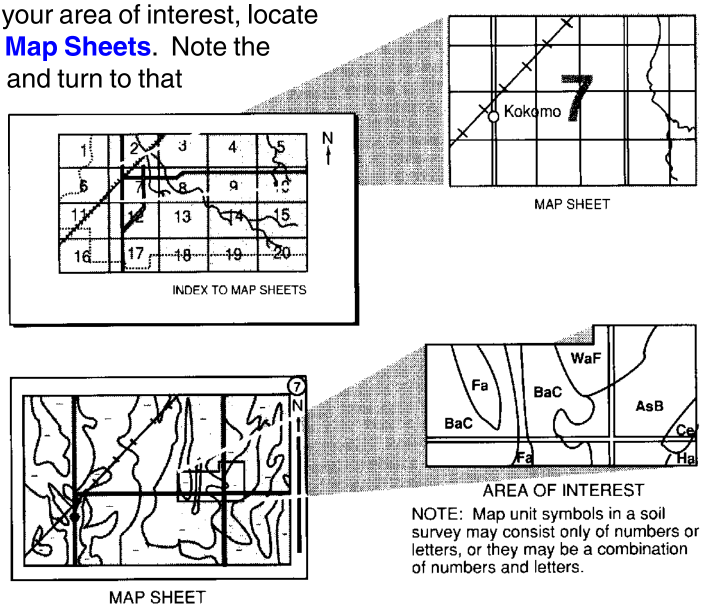
The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1988. Soil names and descriptions were approved in 1991. The correlation document was amended in 2005 for SSURGO purposes. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1988. This survey was made cooperatively by the Natural Resources Conservation Service and the Massachusetts Agricultural Experiment Station. The Department of Agricultural Resources from the Massachusetts Executive Office of Environmental Affairs provided funding for digitization of the soil maps. The survey is part of the technical assistance furnished to the Middlesex Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, these maps do not show the small areas of contrasting soils that could have been shown had the field mapping been done at a larger scale.

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Cover: The Minuteman Monument is one of many historic sites in Middlesex County. The floodplain of the Concord River is in the background; the river has flooded into areas of very poorly drained Saco mucky silt loam. (Photo courtesy of Minuteman National Historic Park, U.S. Department of the Interior.)

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited for use as septic tank absorption fields. A high water table makes a soil poorly suited for use as a site for basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Christine Clarke
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Middlesex County, Massachusetts

Communities of Acton, Arlington, Ashby, Ashland, Ayer, Bedford, Belmont, Billerica, Boxboro, Burlington, Cambridge, Carlisle, Chelmsford, Concord, Dracut, Dunstable, Everett, Framingham, Groton, Holliston, Hopkinton, Hudson, Lexington, Lincoln, Littleton, Lowell, Malden, Marlborough, Maynard, Medford, Melrose, Natick, Newton, North Reading, Pepperell, Reading, Sherborn, Shirley, Somerville, Stoneham, Stow, Sudbury, Tewksbury, Townsend, Tyngsboro, Wakefield, Waltham, Watertown, Wayland, Westford, Weston, Wilmington, Winchester, and Woburn.

By Thomas A. Peragallo, Natural Resources Conservation Service

Fieldwork by Thomas A. Peragallo and Albert N. Averill, Jr., Natural Resources Conservation Service
Douglas C. Adamo, Terry D. Ramborger, and James D. Turenne, Middlesex Conservation District

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Massachusetts Agricultural Experiment Station

MIDDLESEX COUNTY is in the northeastern part of Massachusetts (fig. 1). It is bordered on the north by Hillsborough County, New Hampshire; on the northeast by Essex County; on the east by Suffolk County; on the south by Norfolk County; and on the west by Worcester County. The county is comprised of 54 cities and towns covering 542,112 acres or 847 square miles.

Incorporated in 1643, Middlesex County is the oldest county in the United States. Cambridge, the largest city and the county seat, listed a population of 95,802 in 2003 (Cambridge, 2004). The population of the county then was 1,471,724, or 1,737 people per square mile, making it the most populated county in Massachusetts. Most of the people live in the metropolitan area surrounding the city of Boston, which lies across the Charles River from Cambridge. Since 1950, there has been a steady increase in population accompanied by a conversion of land from rural to urban use. The county's economy is led by high technology and commerce. Industrial development extends from major cities and along major highways.

As the county's land has been developed, soil survey information has been promoted and used as resource data for land use decision makers. There has been an increasing demand for more detailed soil interpretations and for the incorporation of soil survey information into protective bylaws.

This survey updates the survey of Middlesex County published in 1924 by the U.S. Department of Agriculture, Bureau of Soils. It provides additional information and has larger-scale maps, which show the soils in greater detail.

General Nature of the Survey Area

This section gives general information about the cultural and natural factors that affect the use and characteristics of the soils in the survey area.

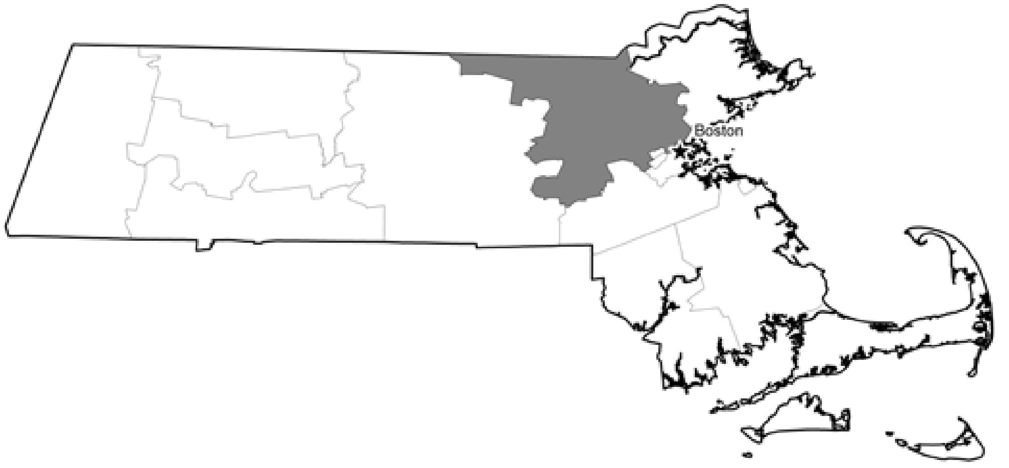

Figure 1.—Location of Middlesex County in Massachusetts.

The legend for this soil survey consists of about 130 different kinds of soils, which range widely in depth, drainage class, texture, and other characteristics. Soils on the uplands are generally sloping, well drained, and loamy. Major limitations to the use of upland soils are related to slope and slow permeability. Soils in the valleys are generally level or gently sloping, sandy, and well drained or very poorly drained. Wetness is the major limitation to the use of valley soils.

History and Development

Incorporated May 10, 1643, Middlesex County was one of the first areas in the country to be settled by English colonists. The county's first established town was Cambridge. In 1636, funds were appropriated in Cambridge for the establishment of the nation's first college, known today as Harvard University.

Middlesex County was the site of the Revolutionary War battles of Lexington and Concord on April 19, 1775, which marked the beginning of the colonists' fight for independence from England. Concord later was the home of writers Ralph Waldo Emerson, Louisa May Alcott, and Henry David Thoreau.

Through the mid- to late-1700s, much of the county had been settled by people in search of land for farming. The terraces and lowlands of the southeastern part of the county were the first to be settled. Clearing then spread to the hills and ridges of the adjacent regions until 75 to 80 percent of the county had been cleared. The numerous stone walls throughout the upland areas are evidence that the forests were once cut or burned, and the stones were moved to the edges of the fields. Although the predominant occupation was subsistence farming, the early settlers contributed to a vigorous international trade by supplying the many ships of the Massachusetts Colony with fur and wood products.

The numerous rivers throughout the county provided power needed for manufacturing and industry. By the early 1700s, many sawmills and gristmills had been constructed. The textile, boot, and shoe industries were the first non-farm industries that arose to meet the needs of the settlers. The first factory in America to manufacture raw cotton into finished cloth under one roof was established in 1813, in the city of Waltham. By 1831, there were seven textile concerns in the city of Lowell on the Merrimack River.

Commerce and trade in the county grew as transportation systems improved. In 1803, the Middlesex Canal was constructed between Boston and the Merrimack River near Lowell, providing additional access to Boston and northern Middlesex County and New Hampshire. The development of railroad systems made the canal obsolete by 1852. The railroads opened markets to county farmers by providing efficient transport of fruits and vegetables to Boston and the larger towns.

Overall economic and land use trends in the county have shifted dramatically. In 1920, land in farms made up 48 percent of the entire county, as compared to 7 percent in 1987. In 1997, there were only about 531 farms in the county (Holm, 2000), most in the northern and western towns, though a few vegetable farms survived in the urbanized areas. More recently, however, small farms producing herbs, fruits, and vegetables are thriving as important producers for local markets. In 2002, there were about 579 farms on 6 percent of the land in the county, with an average net cash income of about $21,000 per farm, the highest for a county in Massachusetts (USDA, 2002).

Improved highway systems and cheaper labor and operating costs in other areas of the country caused a decline in the amount of manufacturing in this area in the early 1960s. The many colleges and universities in the area have since provided employees for local computer and electronics industries. Sophisticated planning and zoning bylaws have directed most recent industrial development to specific areas, as well as providing a balance of park, recreation, and conservation land. Residential zoning laws in the less-densely populated western towns typically require lot sizes of from one to three acres. The once rural outlying areas experienced explosive residential growth throughout the 1980s. This growth has resulted in a five- to ten-fold increase in land values. The cost of land in 1920 ranged from $20 to $1,500 per acre, whereas in 1988 the same land ranged in value from about $3,700 per acre for farmland, to $800,000 for residential lots, and higher for commercial or industrial land.

Climate

In general, winters in Middlesex County are cold, and summers are warm. The start and the end of the warm period are somewhat delayed by the moderating effects of the Atlantic Ocean.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Bedford, Massachusetts in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 28.0 degrees F and the average daily minimum temperature is 18.5 degrees. The lowest temperature on record, which occurred at Bedford on January 15, 1957, is -19 degrees. In summer, the average temperature is 69.1 degrees and the average daily maximum temperature is 80.3 degrees. The highest recorded temperature, which occurred on July 21, 1977, is 101 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is about 46.9 inches. Of this, about 22.6 inches, or 48 percent, usually falls in April through September. The growing season for most crops in the county falls within this period. In 2 years out of 10, the rainfall in April through September is less than 11.9 inches. The heaviest 1-day rainfall during the period of record was 6.9 inches at Natick on September 11, 1999. Thunderstorms occur on about 18 days each year, and most occur in July.

The average seasonal snowfall is about 53.2 inches. The greatest snow depth at any one time during the period of record was 32 inches. On the average, 62 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year. The heaviest 1-day snowfall on record was 21 inches, recorded on March 4, 1960.

The average relative humidity in midafternoon is about 58 percent. Humidity is higher at night, and the average at dawn is about 73 percent. The sun shines 64 percent of the time possible in summer and 54 percent in winter. The prevailing wind is from the west-northwest. Average windspeed is highest, 13.9 miles per hour, in March.

Winter storms moving northeastward along the coast frequently bring rain and thawing and then more snow and cold weather. In summer, sea breezes frequently moderate the temperature, particularly near the coast.

Geology

Rudy Chlanda, Geologist, Natural Resources Conservation Service, helped to prepare this section.

Physiography, Relief, and Drainage

Middlesex County is located in the New England physiographic province of the Appalachian Highlands physiographic division, with most of the county lying within the Seaboard lowland section (Fenneman, 1946; and Schoeneberger, 2002). The county is in three major physiographic areas. From west to east, they are: the Central Uplands, the Coastal Lowlands (sometimes referred to as the Eastern Plateau or Coastal Hills), and the Boston Basin (Denney, 1982).

The Central Uplands cover extreme northwestern Middlesex County, extending eastward to about the Nashua River. The landscape is characterized by steep hills dissected by deep, narrow, interconnected valleys. The summit elevations range from about 1,470 feet above sea level, just north of Mount Watatic in the northwest corner of the county, to about 350 feet above sea level in the southeast part of the region.

The Coastal Lowlands cover most of that part of the county extending from the Nashua River and east and south to an escarpment that passes through Waltham, Arlington, and Malden. This region is characterized by numerous gently rolling hills with low relief, which blend subtly into adjacent landforms. These hills rise less than 400 feet above sea level, with the exception of the Nashoba Hills, which reach an elevation of 504 feet in the town of Littleton. Where glacial till is shallow, the topography and drainage patterns reflect the irregular configuration of the underlying bedrock surface. There are deeper deposits of glacial till on the numerous round and oval hills. These hills, called drumlins, are isolated or are arranged in small groups. They generally have a north/south orientation. The drumlins are associated with many nearly level glacial stream terraces and outwash plains. The Eastern Plateau is interrupted by the Sudbury Basin, a broad, roughly oval valley in the south-central part of the county. The basin, formerly containing a glacial lake, is now 20 to 200 feet above sea level. The basin is drained by shallow, low-gradient streams flanked by marshy flood plains, and is dotted with small, low, smooth hills.

The Boston Basin is located in the southeastern part of the county. It extends from the escarpment that passes through Waltham, Arlington, and Malden, eastward to Boston Harbor. It is a nearly level plain, less than 50 feet above sea level, broken by drumlins that rise sharply to 150 feet above sea level. Heavy urbanization in this region has resulted in major alterations of the original topography and drainage.

The county contains all or portions of nine watersheds: Nashua, Merrimack, Concord, Assabet, Sudbury, Charles, Ipswich, Mystic, and Saugus. Major streams are fed by numerous minor tributaries in a non-systematic pattern common to glaciated landscapes. Middlesex County has over 280 lakes, ponds, and artificial reservoirs (Koteff, 1981).

The Nashua River, with the Squannacook and Nissitissit rivers as major tributaries, drains the northwest part of the county, and flows north to Nashua, New Hampshire, where it flows into the Merrimack River. The Sudbury, Assabet, and Concord rivers drain the central part of the county. They flow north by way of the Concord River and empty into the Merrimack River at Lowell. The Merrimack River drains the northeast part of the county, carrying its drainage and that of the Concord and Nashua rivers to Newburyport, where it empties into the Atlantic Ocean. The Charles River drains the southern part of the county, flowing east to Boston Harbor. The Ipswich, Saugus, and Mystic rivers drain a narrow strip of land in the easternmost part of the county. The Ipswich River flows north to Ipswich, the Saugus River flows southeast to Lynn Harbor, and the Mystic River flows southeast to Boston's Inner Harbor.

Broad valleys along the Concord, Nashua, and Sudbury rivers contain some of the most productive cropland in the county. Deerfield, Merrimac, Scio, Sudbury, and Windsor soils are mapped on these valley terraces. Flood plains are adjacent to all the major rivers in the county. Limerick, Occum, Pootatuck, Rippowam, Saco, and Winooski soils are mapped on flood plains, and are subject to flooding.

The map of the bedrock geology of the survey area is at the back of this publication.

The bedrock of Middlesex County is a complex of numerous types of igneous and metamorphic rocks. Eleven bedrock map units are shown on the General Bedrock Geologic Map of Middlesex County. These units are the result of the combination of over 40 detailed bedrock map units described on the Bedrock Geologic Map of Massachusetts (Zen, 1983).

Composition of bedrock in the county plays a role in soil color, soil texture, soil mineralogy, and the shape and percentage of coarse fragments. Often, soils reflect the type of bedrock from which glaciers stripped the soil's parent material. Generally, the parent material for today's soils was deposited a relatively short distance from its bedrock source.

Soils derived from granitic and gneissic rocks are predominant in Middlesex County. These soils typically have a high sand content, rounded, sub-rounded, or blocky coarse fragments, and yellowish brown to light olive brown parent material. Canton, Hinckley, Merrimac, and Paxton are examples of soils derived from these rocks.

Soils derived from schistose and phyllitic rocks and rocks of the Boston Basin typically have a high silt content, flat coarse fragments, and gray- to olive-colored parent material. Bernardston, Pittstown, and Quonset are examples of soils derived from these rocks.

General Bedrock Geology Map Units

These map units are taken from the MassGIS on-line map of bedrock lithology of Massachusetts, which uses USGS geologic data (MassGIS, 2004). The bedrock geology map is at the end of this soil survey.

1. Granite of Avalon Terrane: Granite of Precambrian Z age in the Avalon province.

2. Basalt: Dark-colored igneous rock, often columnar in structure.

3. Calcgranofels: Fine-grained calcareous clastic and metaclastic rocks containing calc-silicate minerals. May contain a small percentage of carbonate materials.

4. Calcpelite: Calcareous clastic and metaclastic rocks containing approximately 15-45 percent carbonate materials.

5. Felsic Volcanics: Felsic volcanic rocks and mixed volcanic rocks where felsic volcanics predominate.

6. Granite, other: Granite, other than the peraluminous type.

7. Mafic Rocks: Mafic igneous rocks and their metamorphic equivalents.

8. Metamorphic Rocks, other: Metamorphic rocks other than carbonate rocks, calpelite, calcgranofels, pelitic rocks, sulfidic schists, or mafic rocks.

9. Pelitic Rocks: Pelitic rocks and interbedded pelitic and sandy sediments and their metamorphic equivalents.

10. Peraluminous Granite: Granite types containing primary muscovite, of Late Devonian to Carboniferous age.

11. Sulfidic Schists: Metamorphosed pelitic rocks containing sufficient pyrite and (or) pyrrhotite to develop a rusty-weathering characteristic.

Surficial Geology

Mineral debris left behind by the Wisconsin glacier is the parent material of the soils of Middlesex County. The landscape reveals features of glacial deposition and erosion from the advance and retreat of past continental ice sheets. The direction of ice movement, as discerned from bedrock striations and drumlin orientations, was generally from northwest to southeast.

The landscape and surficial deposits of Middlesex County are mostly the result of systematic retreat of the glacial margin (Koteff, 1981). In addition, small detached blocks of ice within a few miles of the ice margin are responsible for some local variations in topography.

As the ice progressed, it scoured the bedrock surface, leaving deepened and widened valleys. When the ice melted, it left exposed bedrock in some places in the highlands and blanketed other spots with varying thicknesses of glacial till as much as 280 feet deep. Valleys were left filled or veneered with till deposits or stratified glaciofluvial material laid down by meltwater streams. The coarsest gravel and cobbles were deposited closest to the head of the outwash, where stream velocities were greatest. The texture of deposits became progressively finer as the glacial meltwaters flowed away from the ice margin. The fluvial sequence typically ends in a glacial lake as deposits of very fine sand, silt, or clay.

The glacial deposits provided the parent material from which soils formed. The surficial deposits can be divided into two broad categories: glacial till and glaciofluvial deposits.

Glacial till was deposited either directly beneath or at the margins of the ice, or let down in place from the ice as it melted. The till is a heterogeneous mixture of boulders, cobbles, gravel, sand, silt, and clay. The predominant texture of soils formed from glacial till ranges from loamy sand to loam with various amounts of coarse fragments. The till is typically brown, olive, or gray, depending on the bedrock source of its parent material. Wisconsin Age glacial till covers about 45 percent of the county.

The till deposits form drumlins, ridges, or undulating ground moraine. Bernardston, Canton, Charlton, and Paxton are examples of soils formed in till. The Bernardston and Paxton soils occur on drumlins. The Charlton soils occur on ridges, and Canton soils occur on ground moraine.

The glaciofluvial or glacial outwash deposits occur in stream valleys. The material is typically stratified sand and gravel nearly free of silt and clay. The coarse fragments are mostly rounded gravel and cobbles. Glaciofluvial deposits cover about 30 percent of the county.

The glaciofluvial deposits occupy such landforms as stream terraces, outwash plains, kames, eskers, and deltas. Hinckley, Merrimac, and Windsor series are some soils formed in glaciofluvial deposits. Some of these soils have a thin mantle of loamy material overlying the stratified fluvial sands and gravels.

There are also lacustrine and fluviolacustrine deposits that occupy glacial lakebeds. The largest glacial lakebeds are in the Charles, Concord, Nashua, and

Sudbury River watersheds. Raynham and Scio series are examples of soils that formed in lacustrine or fluviolacustrine material.

Coastal marine deposits occur in the Boston Basin as a result of a lowering of a fluctuating sea level during the glacial period. Borings and excavations indicate a sea level 50 feet or more below its present level. During the time of lower sea levels, the Boston Basin was likely a broad valley with a lot of clay on the valley floor. The basin provided an outlet for the confluence of two major ice lobes or currents (Kaye, 1976).

Post-glacial deposits of recent alluvium lie adjacent to the major streams in the county. These deposits typically have a high content of silt, fine sand, and organic matter. Rippowam and Saco series are examples of soils formed in recent alluvium. This material is of limited extent, comprising about two percent of the area of the county.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their locations and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants growing on the soils; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of that landform (fig. 2). By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how the soils were formed. This model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area which will be found at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must establish boundaries between the soils, even though they can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries of the map unit polygons.

Soil scientists record the characteristics of the soil profiles that they study. They note soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assign the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classify and name the soils in the survey area, they compare the individual soils with similar soils in the same taxonomic class in other areas so that they can confirm data and assemble additional data based on experience and research.

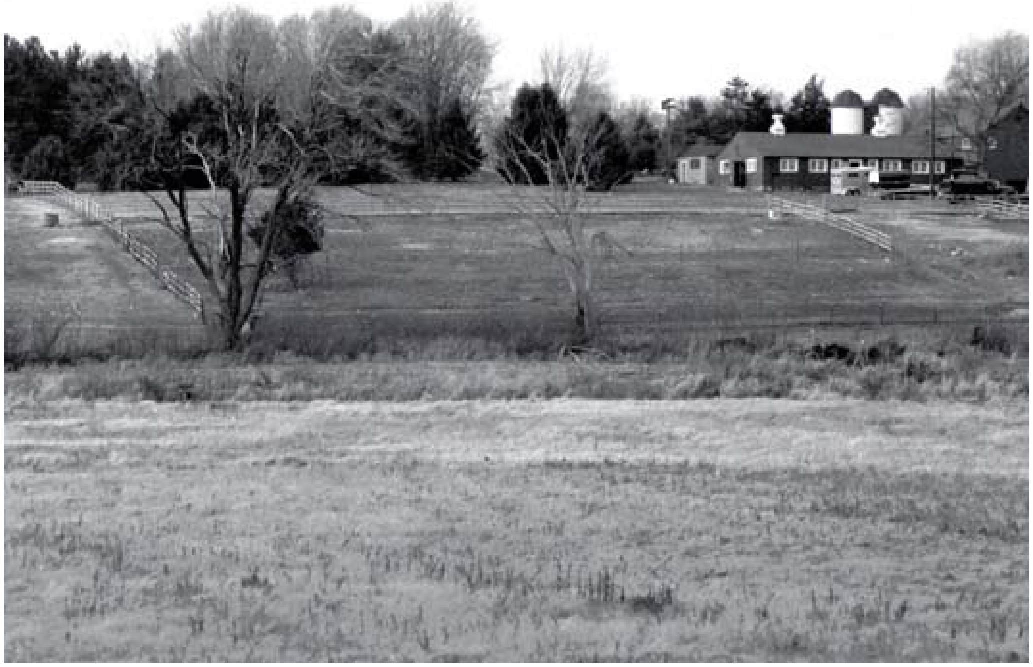

Figure 2.—The pasture and farm buildings are on a broad, asymmetrical, smoothly sloping hill typical of landforms called drumlins. Paxton soils commonly occur on drumlin landforms. Very poorly drained Scarboro soils are in the depression in the central part of the photo, while moderately well drained Scituate soils are in the background.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit.

General Soil Map Units

The general soil map in this publication shows broad areas which have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another, but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soil Descriptions

1. Bernardston-Pittstown

Nearly level to steep, very deep, well drained and moderately well drained, loamy soils formed in glacial till on drumlins and ground moraine in the northwest part of the survey area

This unit makes up about 3 percent of the survey area and is about 28 percent Bernardston soils, 13 percent Pittstown soils, and 59 percent soils of minor extent (fig. 3).

Gently sloping to steep, well drained Bernardston soils are on hills. Typically, the soils have a surface layer of very dark grayish brown very fine sandy loam about 3 inches thick. The subsoil is about 18 inches thick. It is dark yellowish brown gravelly silt loam in the upper part and yellowish brown gravelly silt loam in the lower part. The substratum is about 44 inches thick. It is firm, light olive brown gravelly silt loam in the upper part and very firm, olive brown gravelly silt loam in the lower part. Channers and flagstones of dark gray phyllite and slate make up 50 to 75 percent of the coarse fragments.

Nearly level and gently sloping, moderately well drained Pittstown soils are on summits and toeslopes of uplands. Typically, the soils have a surface layer of very dark grayish brown silt loam about 2 inches thick. The subsoil is about 15 inches thick. It is friable, dark yellowish brown silt loam in the upper part and olive silt loam with prominent yellowish red masses of iron accumulation in the lower part. The substratum is about 48 inches thick. It is extremely firm, olive gray channery silt loam with prominent yellowish red masses of iron accumulation.

The common minor soils in the map unit are poorly drained Ridgebury and very poorly drained Whitman soils in depressions and drainageways. Well drained Charlton and somewhat excessively drained Hollis soils are in areas where bedrock is close to the surface. Excessively drained Quonset soils, which formed in glacial outwash, are found in narrow valleys.

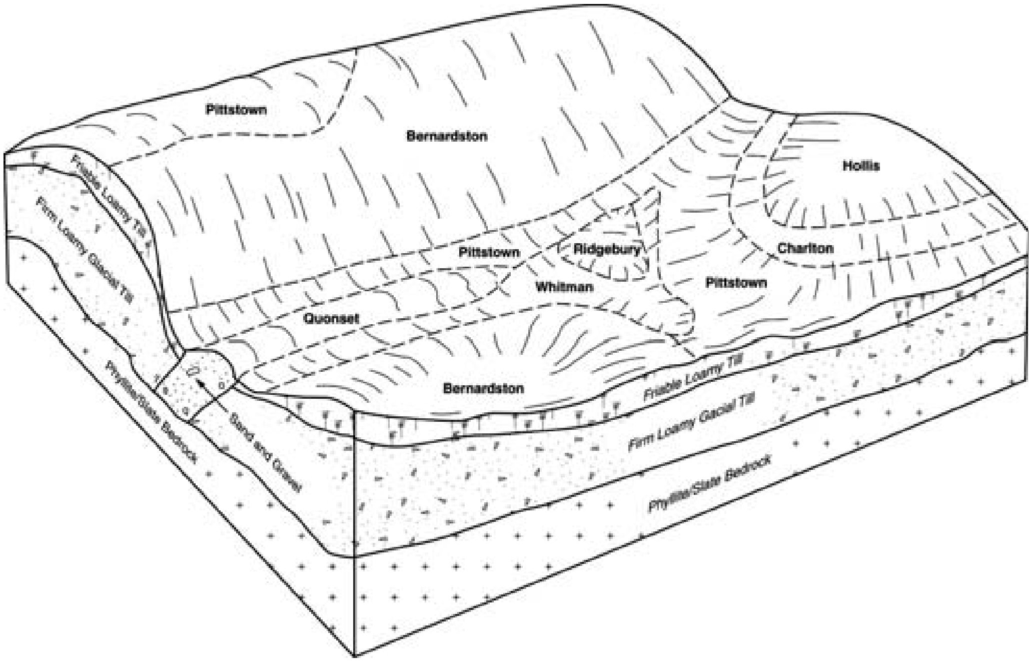
Pittstown
Bernardston
Hollis
Friable Loamy Till
Firm Loamy Glacial Till
Pittstown
Ridgebury
Charlton
Whitman
Pittstown
Quonset
Bernardston
Sand and Gravel
Phyllite/Slate Bedrock
Friable Loamy Till
Firm Loamy Glacial Till
Phyllite/Slate Bedrock

Figure 3.—A typical pattern of the soils and underlying material in the Bernardston-Pittstown general soil map unit.

This map unit is mostly forested. Some areas are orchards, hay land, and pasture. Some nearly level to strongly sloping areas are used for homesites.

This map unit has severe limitations for onsite sewage disposal because of restricted permeability and a seasonal high water table. Where slopes do not exceed 15 percent, this map unit is well suited to cultivated crops, orchards, and pasture, and has good potential for conifer production. Areas with slopes in excess of 15 percent are suitable for orchards but are subject to erosion.

2. Canton-Charlton-Hollis

Gently sloping to steep, very deep to shallow, well drained and somewhat excessively drained, loamy and sandy soils formed in glacial till and ice-contact stratified drift; on uplands

This unit makes up about 15 percent of the survey area and is about 33 percent Canton soils, 29 percent Charlton soils, 21 percent Hollis soils, and 17 percent soils of minor extent (fig. 4).

Nearly level to very steep, well drained Canton soils are on uplands adjacent to plains and stream terraces. Typically, the soils have a surface layer of very dark grayish brown fine sandy loam about 8 inches thick. The subsoil is about 13 inches thick. It is very friable, dark yellowish brown fine sandy loam. The substratum is about 44 inches thick. It is very friable or loose, yellowish brown very gravelly loamy sand.

Gently sloping to steep, well drained Charlton soils and somewhat excessively drained Hollis soils are on uplands where the relief reflects the underlying bedrock surface. Charlton soils are on toeslopes and in low pockets. Hollis soils are on hilltops and ridges. Typically, Charlton soils have a surface layer of dark brown fine sandy loam about 5 inches thick. The subsoil is about 17 inches thick. It is yellowish brown sandy loam. The substratum is about 43 inches thick. It is grayish brown gravelly sandy loam. It is friable in the upper part and firm in the lower part. Typically, the Hollis soils have a surface layer of black fine sandy loam about 2 inches thick. The subsoil is

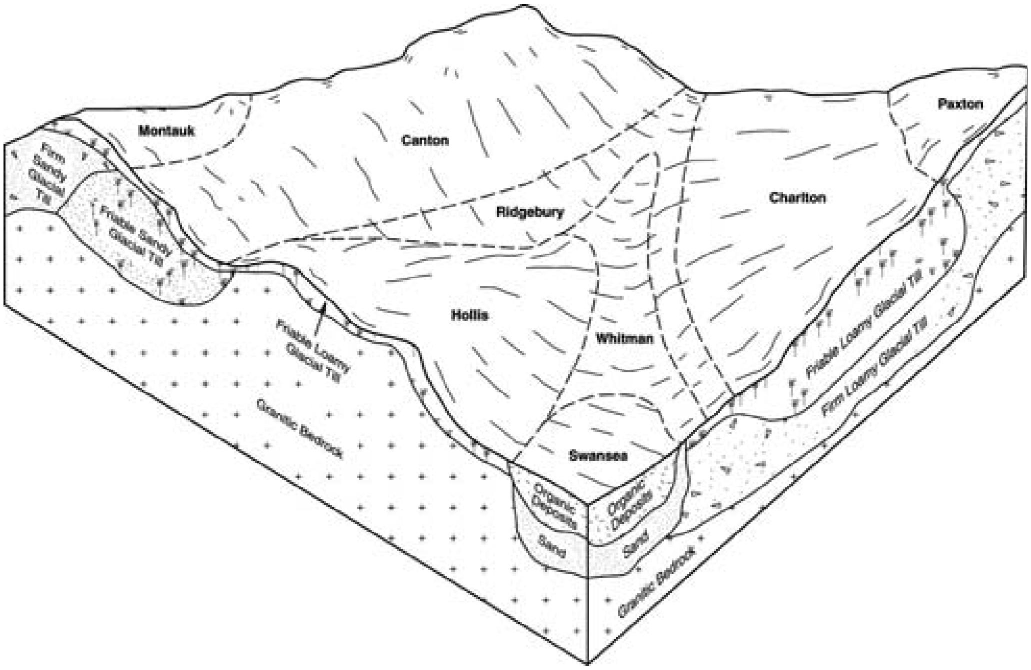
Montauk
Canton
Ridgebury
Charlton
Paxton
Hollis
Whitman
Swansea
Firm Sandy Glacial Till
Friable Sandy Glacial Till
Friable Loamy Glacial Till
Granitic Bedrock
Organic Deposits
Sand
Organic Deposits
Sand
Granitic Bedrock
Friable Loamy Glacial Till
Firm Loamy Glacial Till

Figure 4.—A typical pattern of the soils and underlying material in the Canton-Charlton-Hollis association.

dark yellowish brown fine sandy loam about 12 inches thick. Bedrock is at a depth of 14 inches.

The dominant minor soils are poorly drained Ridgebury soils, very poorly drained Swansea and Whitman soils in depressions and drainageways, and well drained Paxton and Montauk soils on smooth-sloping uplands.

This map unit is mostly in forests. Some areas are in hay land and pasture. Many nearly level to strongly sloping areas are used for homesites.

This map unit has severe limitations for onsite sewage disposal. It is poorly suited to cultivated crops and suited to orchards and pasture where surface stones are removed and slopes do not exceed 15 percent. This map unit has moderate potential for conifer production.

3. Hinckley-Freetown-Windsor

Nearly level to steep, very deep, excessively drained, sandy soils that formed in glacial outwash, and nearly level, very deep, very poorly drained, organic soils

This unit makes up about 30 percent of the survey area and is about 23 percent Hinckley soils, 19 percent Freetown soils, 17 percent Windsor soils, and 41 percent soils of minor extent (fig. 5).

Nearly level to steep, excessively drained Hinckley soils are on glacial outwash plains and terraces. Typically, the soils have a surface layer of dark brown loamy sand about 7 inches thick. The subsoil is loose, yellowish brown very gravelly loamy sand about 10 inches thick. The substratum is loose, olive brown very gravelly sand about 48 inches thick.

Nearly level, very poorly drained Freetown soils are in large depressions and along streams. Typically, the soils have a surface tier of black muck about 7 inches thick. The subsurface and bottom tiers are dark reddish brown, very dark gray, and black muck, mucky peat and peat to a depth of about 65 inches.

Nearly level to strongly sloping, excessively drained Windsor soils are on glacial outwash plains, and the tops of terraces and deltas. Typically, the soils have a surface

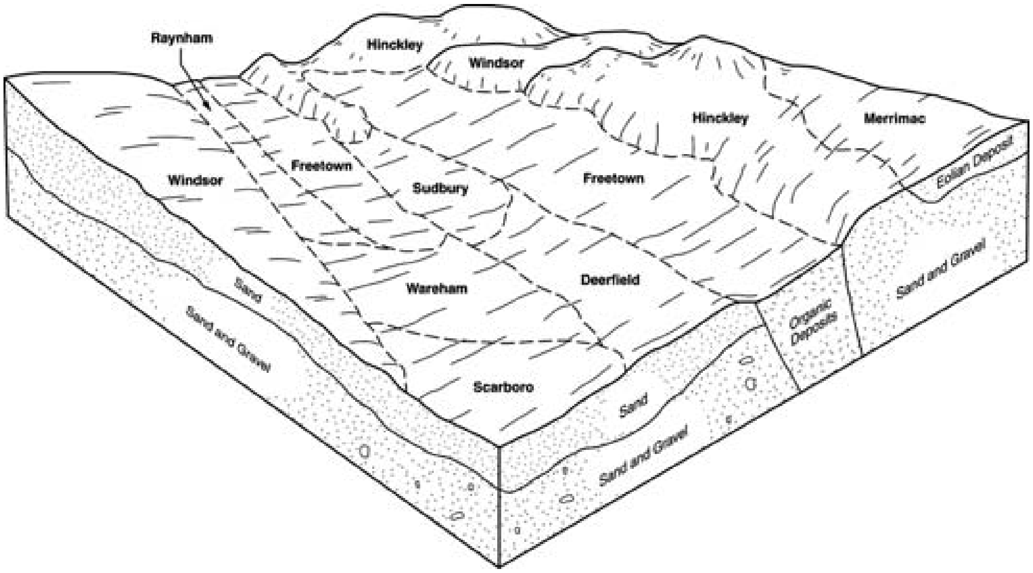

Figure 5.–A typical pattern of the soils and underlying material in the Hinckley-Freetown-Windsor association.

layer of dark brown, loamy sand about 8 inches thick. The subsoil is about 15 inches thick. It is loose, yellowish brown loamy sand in the upper part and loose, light olive brown sand in the lower part. The substratum is about 42 inches thick. It is loose, light yellowish brown gravelly sand and sand.

The dominant minor soils are the somewhat excessively drained Merrimac soils on smooth-sloping plains, moderately well drained Sudbury and Deerfield soils on low plains and in swales, and poorly drained Wareham and Raynham soils and very poorly drained Scarboro soils in depressions and along drainageways.

This map unit is mostly forested. Some areas are cropland. Many nearly level to strongly sloping areas are used for homesites. A few isolated areas are used as sources of sand and gravel.

This map unit has severe limitations for onsite sewage disposal, as the Hinckley and Windsor soils readily absorb but may not adequately treat the effluent from septic tanks. This map unit is poorly suited to cultivated crops and pasture as the Hinckley and Windsor soils are droughty and require irrigation for optimum crop production. Freetown soils have severe limitations for urban use because they are wetlands.

4. Urban land-Merrimac-Udorthents

Nearly level to strongly sloping, very deep, somewhat excessively drained Merrimac soils on broad outwash plains and valleys; areas of Urban land and Udorthents

This unit makes up about 14 percent of the survey area and is about 45 percent Urban land, 27 percent Merrimac soils, 23 percent Udorthents, and 5 percent soils of minor extent (fig. 6).

Nearly level and gently sloping, somewhat excessively drained Merrimac soils are in areas where less than 85 percent of the land is covered with impervious surfaces, and most areas are in intricate patterns with Urban land. Typically, the soils have a surface layer of very dark grayish brown fine sandy loam about 9 inches thick. The subsoil is very friable, dark yellowish brown gravelly sandy loam in the upper 9 inches. The lower part is about 8 inches thick and is loose, dark yellowish brown very gravelly loamy coarse sand. The substratum is loose, light yellowish brown very gravelly coarse sand in the upper part and loose, light olive brown gravelly coarse sand in the lower part.

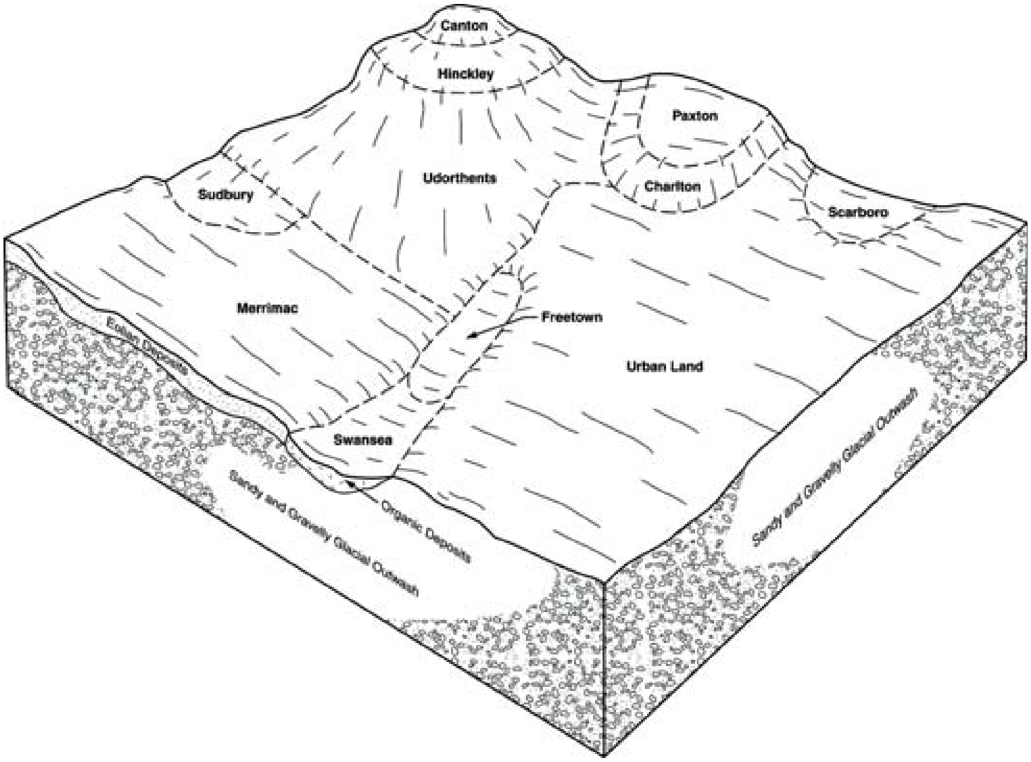

Figure 6.–A typical pattern of the soils and underlying material in the Urban land-Merrimac-Udorthents association.

Urban land consists of areas where 85 percent or more of the land is covered with impervious surfaces such as buildings and pavement.

Udorthents consist mainly of areas where soil has been removed and of areas which have been filled. Where the surface soil has been removed, loamy or sandy subsoil and substratum layers are exposed. The fill consists of soil, rubble, refuse, and spoil from dredging, and ranges from 2 to 20 feet thick.

The dominant minor soils are well drained Canton, Charlton, and Paxton soils on uplands. Also included are moderately well drained Sudbury soils in swales and depressions and excessively drained Hinckley soils on knolls and low ridges. Freetown, Swansea, and Scarboro soils occur in isolated wetlands.

This map unit is mostly in residential, commercial, and industrial developments. Because of the Merrimac soils, this map unit has severe limitations for septic tank absorption fields, but since most of these areas are served by municipal water and sewage disposal systems, there are few limitations for additional development, as far as the major components are concerned.

5. Narragansett-Haven

Nearly level to moderately steep, very deep, well drained, loamy soils formed in eolian material overlying sandy glacial till and glacial outwash; on uplands and in valleys

This unit makes up about 4 percent of the survey area and is about 60 percent Narragansett soils, 18 percent Haven soils, and 22 percent soils of minor extent (fig. 7).

Gently sloping to moderately steep, well drained Narragansett soils are on uplands where the topography is highly influenced by the underlying bedrock. Typically, the soils have a surface layer of dark yellowish brown silt loam about 5 inches thick. The subsoil is about 28 inches thick. It is very friable, olive yellow silt loam. The

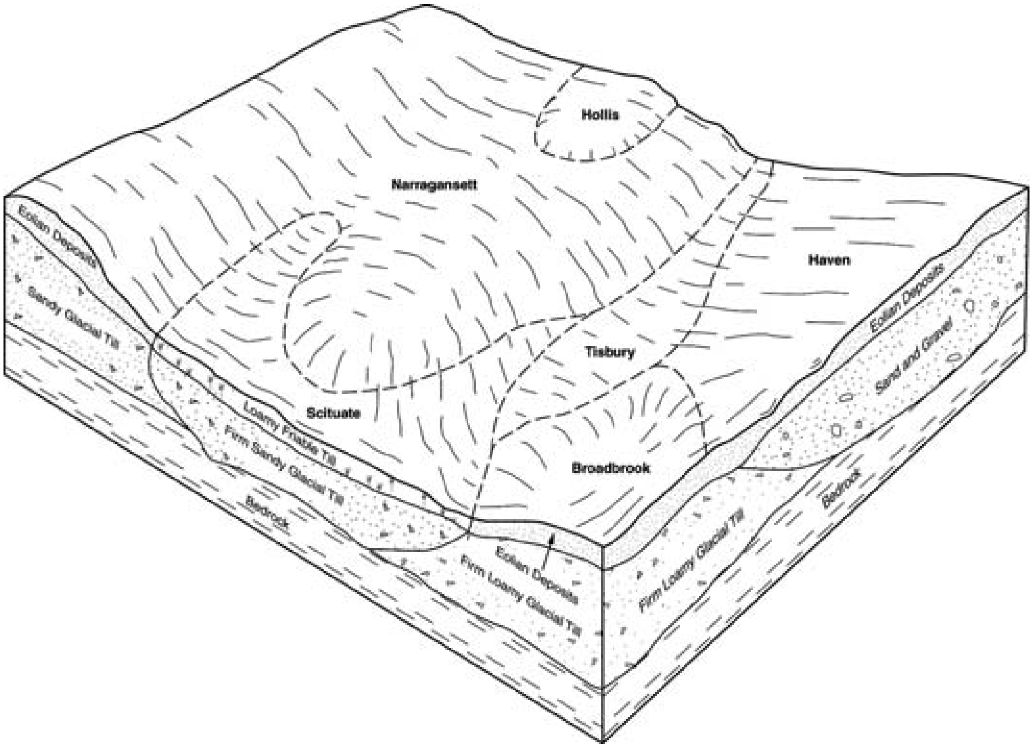
Hollis
Narragansett
Haven
Tisbury
Scituate
Broadbrook
Eolian Deposits
Sandy Glacial Till
Loamy Friable Till
Firm Sandy Glacial Till
Bedrock
Eolian Deposits
Firm Loamy Glacial Till
Firm Loamy Glacial Till
Bedrock
Eolian Deposits
Sand and Gravel

Figure 7.–A typical pattern of the soils and underlying material in the Narragansett-Haven association.

substratum is about 32 inches thick. It is friable, light olive brown gravelly loamy sand in the upper part and loose, light olive brown very gravelly loamy sand in the lower part.

Nearly level and gently sloping, well drained Haven soils are on low plains and in narrow valleys that follow stream patterns. Typically, the soils have a surface layer of black silt loam about 2 inches thick. The subsoil is about 30 inches thick. It is friable, yellowish brown silt loam in the upper part and friable, olive yellow very fine sandy loam in the lower part. The substratum is about 33 inches thick. It is loose, olive yellow fine sand in the upper part and loose, light yellowish brown stratified sand in the lower part.

The dominant minor soils in this map unit are shallow, somewhat excessively drained Hollis soils on hilltops and ridges, well drained Broadbrook soils on smooth-sloping uplands, moderately well drained Scituate soils in upland swales and depressions, and moderately well drained Tisbury soils in low valley positions.

This map unit is mostly forest. Some areas are cropland, hay land, or pasture. Many areas are used for homesites.

This map unit has severe limitations for onsite sewage disposal because the Haven soils readily absorb but may not adequately filter septic tank effluent. Where slopes do not exceed 15 percent, this map unit is well suited to cultivated crops and pasture. It has good potential for the production of conifers.

6. Paxton-Montauk-Woodbridge

Nearly level to steep, very deep, well drained and moderately well drained, loamy soils formed in glacial till; on drumlins and smooth-sloping ground moraines

This unit makes up about 19 percent of the survey area and is about 28 percent Paxton soils, 19 percent Montauk soils, 15 percent Woodbridge soils, and 38 percent soils of minor extent (fig. 8).

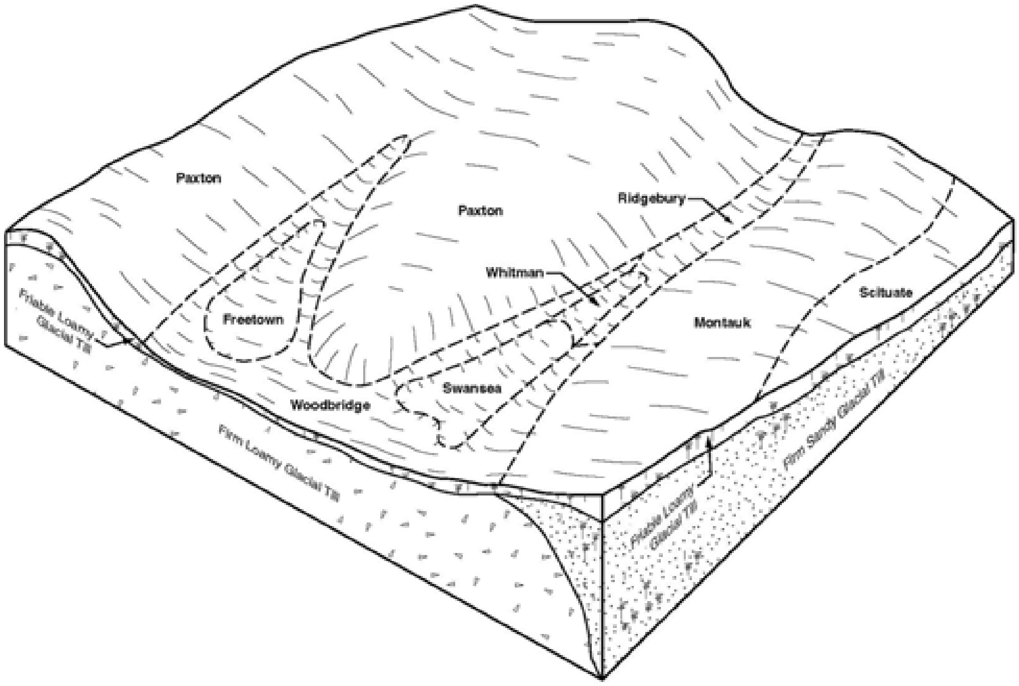

Figure 8.–A typical pattern of the soils and underlying material in the Paxton-Montauk-Woodbridge association.

Gently sloping to steep, well drained Paxton soils are on top slopes and side slopes of drumlins. Typically, the soils have a surface layer of dark yellowish brown, fine sandy loam about 7 inches thick. The subsoil is about 15 inches thick. It is friable, yellowish brown fine sandy loam in the upper part and friable, olive yellow sandy loam in the lower part. The substratum is about 43 inches thick. It is firm, light olive brown sandy loam in the upper part and very firm, grayish brown fine sandy loam in the lower part.

Gently sloping to moderately steep, well drained Montauk soils are on smooth-sloping ground moraines and broad, irregularly shaped drumlins. Typically, the soils have a surface layer of very dark grayish brown fine sandy loam about 7 inches thick. The subsoil is about 22 inches thick. It is friable, yellowish brown sandy loam in the upper part and friable, light olive brown sandy loam in the lower part. The substratum is about 36 inches thick. It is firm, light olive brown gravelly loamy sand.

Nearly level to strongly sloping, moderately well drained Woodbridge soils are in drainage swales and on top slopes, upper side slopes, and toeslopes of drumlins. Typically, the soils have a surface layer of very dark brown, fine sandy loam about 2 inches thick. The subsoil is about 26 inches thick. It is friable, yellowish brown fine sandy loam and has distinct strong, brown and yellowish red masses of iron accumulation, and light brownish gray redoximorphic depletions in the lower part. The substratum is about 37 inches thick. It is firm, light olive brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and faint light brownish gray redoximorphic depletions.

The dominant minor soils are moderately well drained Scituate soils on drumlins and moraines and poorly drained Ridgebury and very poorly drained Whitman soils in depressions and drainageways. Many small areas of very poorly drained Freetown and Swansea soils occur in depressions and small narrow valleys.

This map unit is mostly forest. Some areas are orchards, hay, or pasture. Some nearly level to strongly sloping areas are used for homesites.

This map unit has severe limitations for onsite sewage disposal because of restricted permeability and a seasonal high water table. Where slopes do not exceed 15 percent, this map unit is well suited to cultivated crops, orchards, pasture, and has good potential for conifer production. Areas with slopes in excess of 15 percent are suitable for orchards, but are subject to erosion.

7. Quonset-Carver

Nearly level to steep, very deep, excessively drained, sandy soils that formed in glacial outwash in the northwest part of the survey area

This unit makes up about 6 percent of the survey area and is about 28 percent Quonset soils, 15 percent Carver soils, and 57 percent soils of minor extent.

Gently sloping to steep, excessively drained Quonset soils are on glacial outwash plains and terraces. Typically, the soils have a surface layer of black, sandy loam about 7 inches thick. The subsoil is 21 inches thick. It is dark yellowish brown channery loamy sand in the upper part and yellowish brown very channery loamy sand in the lower part. The substratum is loose, olive brown very channery sand about 37 inches thick. Dark channers and flagstones of phyllite, schist, shale, and slate make up 50 to 75 percent of the coarse fragments.

Nearly level to strongly sloping, excessively drained Carver soils are on top of glacial outwash plains, terraces, and deltas. Typically, the soils have a surface layer of very dark grayish brown loamy coarse sand about 7 inches thick. The subsoil is about 14 inches thick. It is yellowish brown loamy coarse sand in the upper part and olive yellow coarse sand in the lower part. The substratum is about 44 inches thick. It is loose, light yellowish brown gravelly coarse sand in the upper part and loose, light yellowish brown coarse sand in the lower part.

The dominant minor soils are excessively drained Windsor soils on outwash plains and terraces, moderately well drained Deerfield soils in swales, and poorly drained Wareham soils and very poorly drained Scarboro soils in depressions and along drainageways.

This map unit is mostly in forests, though some areas are used as cropland. Many nearly level to strongly sloping areas are used for homesites. A few isolated areas are used as a source of sand and gravel.

This map unit has severe limitations for onsite sewage disposal, as the soils readily absorb, but may not adequately filter the effluent from septic tanks. Where slopes do not exceed 15 percent, the soils are suited to cultivated crops and pasture, but are droughty and require irrigation for optimum crop production.

8. Urban land-Charlton-Paxton

Nearly level to very steep, very deep, well drained, loamy soils formed in glacial till on uplands; areas of Urban land

This unit makes up about 9 percent of the survey area and is about 48 percent Urban land, 15 percent Charlton soils, 8 percent Paxton soils, and 29 percent soils of minor extent.

Urban land consists of areas where 85 percent or more of the land is covered with impervious surfaces such as buildings and pavement.

Gently sloping to steep, well drained Charlton and Paxton soils are in areas where less than 85 percent of the land is covered with impervious surfaces, and most areas are in intricate patterns with Urban land. The Charlton soils are on uplands where the relief is affected by the underlying bedrock. Typically, the soils have a surface layer of dark brown fine sandy loam about 5 inches thick. The subsoil is about 17 inches thick. It is yellowish brown sandy loam. The substratum is about 43 inches thick. It is grayish brown gravelly sandy loam that is friable in the upper part and firm in the lower part.

The Paxton soils are on top slopes and side slopes of drumlins. Typically, the soils have a surface layer of dark yellowish brown fine sandy loam about 7 inches thick. The subsoil is about 15 inches thick. It is yellowish brown fine sandy loam in the upper part and olive yellow sandy loam in the lower part. The substratum is about 43 inches thick. It is firm, light olive brown sandy loam in the upper part and very firm, grayish brown fine sandy loam in the lower part.

The dominant minor soils are moderately well drained Woodbridge soils and well drained Canton and Newport soils on uplands and drumlins, and shallow, somewhat excessively drained Hollis soils on hilltops and ridges. Udorthents are in areas where soil has been removed and in areas that have been filled.

This map unit is mostly in residential, commercial, and industrial developments. It has severe limitations for septic tank absorption fields, because of the Paxton soils, but as most of these areas are served by municipal water and sewage disposal systems, there are very few limitations for additional development, as far as the major components are concerned.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Paxton fine sandy loam, extremely stony, is a phase of the Paxton series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Narragansett-Haven, shown on the General Soils Map, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. There are no undifferentiated groups in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, gravel, is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Soil Descriptions

2A—Pootatuck fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, moderately well drained soil is on flood plains of major rivers in the county. The areas are irregular in shape and range from 6 to 135 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 15 inches, dark yellowish brown fine sandy loam
15 to 23 inches, dark yellowish brown sandy loam with distinct grayish brown redoximorphic depletions

Substratum:
23 to 29 inches, light olive brown coarse sand with distinct yellowish brown masses of iron accumulation and distinct light brownish gray redoximorphic depletions
29 to 65 inches, brown gravelly coarse sand

Included with this soil in mapping are small areas of Occum soils on slight rises in the landscape and Rippowam soils in depressions and at lower elevations. Minor soils make up about 20 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to slightly acid
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2.5 feet, November-April
Flooding: occasional for brief periods
Hydrologic group: B

Most areas of this soil are used for woodland or cropland.

This map unit is well suited to cultivated crops and suited to pasture. Flooding and wetness are management concerns. Areas of this map unit are subject to brief local flooding, which is the major factor limiting the use of this soil. The seasonal high water table limits the use of equipment early in the growing season. Establishing shallow surface drainage ditches minimizes the limitation caused by seasonal wetness. The main pasture management concern is overgrazing, which reduces the hardiness and density of forage plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for eastern white pine is high. It is moderate for red maple. Plant competition is a management concern. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal in thinning operations. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Periods of brief flooding may restrict the use of machinery used to apply these management practices.

This map unit is severely limited for building site development because of the hazard of flooding. Constructing roads on raised, coarse-textured fill material and providing adequate side ditches and culverts will help to protect the roads from damage resulting from flooding, frost action, and the shallow depth to the saturated zone.

This map unit has severe limitations for septic tank absorption fields because of wetness, the flooding hazard, and the soil's poor filtering capacity. Soils that are better suited for these uses should be selected.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2w

4A—Rippowam fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, poorly drained soil is on flood plains along major streams and rivers. The areas of this soil are irregular or elongated and elliptical and follow the course of the adjacent stream. They range in size from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black fine sandy loam

Substratum:
7 to 18 inches, dark gray fine sandy loam with prominent brown masses of iron accumulation

18 to 40 inches, dark grayish brown sandy loam with distinct brown masses of iron accumulation
40 to 65 inches, olive fine sand and sand with faint olive gray redoximorphic depletions

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Saco soils at the lowest terrace level along the edges of streams. Also included are areas of Limerick soils in similar landscape positions as the Rippowam soils, and Pootatuck soils at slightly higher terrace levels. Minor soils comprise about 20 percent of the unit.

Major soil properties—

Permeability: moderate or moderately rapid to 40 inches, rapid below 40 inches
Available water capacity: moderate
Soil reaction: very strongly acid to slightly acid
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 0.5 to 1.5 feet, September-June
Flooding: frequent for brief periods
Hydrologic group: C

Most areas of this soil are covered with woods or marsh grasses and sedges.

This map unit is poorly suited to cultivated crops, hay, and improved pasture. The seasonal high water table keeps the soil saturated through late spring, and the map unit is subject to brief local flooding. The main management practices include proper timing of farming operations, particularly delaying planting until after the spring floods, and using water-tolerant plant species.

Potential productivity for both eastern white pine and red maple is moderate. Excess soil moisture, high seedling mortality, and the hazard of windthrow are the main management concerns. Low soil strength limits the operation of equipment to periods when the soil is dry or frozen. Plant competition is a further management concern. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less.

This map unit has severe limitations for building sites because of the seasonal high water table and the hazard of flooding. The wetness and poor filtering qualities of the soils and the hazard of flooding are severe limitations for septic tank absorption fields. Soils that are better suited for these uses should be selected.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 4w

6A—Scarboro mucky fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, very poorly drained soil is in low, flat areas and depressions on glacial outwash plains and terraces. The areas are irregular in shape and range from 6 to 120 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown moderately decomposed organic material
3 to 11 inches, black mucky fine sandy loam

Substratum:
11 to 21 inches, grayish brown sand

21 to 29 inches, dark grayish brown very gravelly coarse sand
29 to 65 inches, dark gray gravelly coarse sand

Included with this soil in mapping are small areas of Birdsall and Swansea soils in similar landscape positions as the Scarboro soils, and Wareham and Raypol soils at slightly higher elevations, commonly along the boundary of the map unit. Minor soils make up approximately 10 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the organic layer, rapid below
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid to 29 inches, very strongly acid to slightly acid below
Depth to bedrock: more than 60 inches
Depth to high water table: 0 to 0.5 feet, January-December; frequently ponded to a depth of 1 foot for long periods
Hydrologic group: D

Most areas of this map unit are woodland. Some areas are open marshland.

This map unit is poorly suited to cropland and pasture because of excess soil moisture. Areas of this map unit are frequently covered with ponded water for long periods of time.

Potential productivity for eastern white pine and red maple is low due to excess soil moisture. Woodland management and productivity are further limited by high seedling mortality and the hazard of windthrow. Optimum growth and survival of trees are not expected. Operation of equipment is a management concern because of low soil strength and should be limited to periods when the soil is very dry or frozen. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

This map unit has severe limitations for building sites due to ponded water on its surface. It is severely limited for septic tank absorption fields because of its poor filtering qualities and ponded surface water. Soils that are better suited for these uses should be selected.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 5w

8A—Limerick silt loam, 0 to 3 percent slopes

This deep, nearly level, poorly drained soil is on low flood plain terraces adjacent to major rivers. The areas are irregular in shape and range from 6 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown silt loam with distinct olive brown masses of iron accumulation

Substratum:
3 to 10 inches, gray silt loam with prominent light olive brown masses of iron accumulation
10 to 40 inches, dark gray silt loam with prominent light olive brown masses of iron accumulation
40 to 65 inches, very dark gray loamy fine sand

Included with this soil in mapping are small areas of Saco soils at lower elevations where the water table is close to or at the surface, and Rippowam soils, which are sandier alluvium. Minor soils make up about 10 percent of the map unit.

Major soil properties—

Permeability: moderate
Available water capacity: high
Soil reaction: strongly acid or moderately acid in the A horizon and upper part of the C horizon, moderately acid to neutral in the lower substratum, to a depth of 40 inches
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 0.5 to 1.5 feet, November-May
Flooding: frequent for brief periods
Hydrologic group: C

Most areas of this map unit are woodland.

This map unit is not rated for cultivated crops and pasture. It is subject to brief local flooding, which is a major factor limiting the use of this soil. The main objective for pasture management should be the prevention of overgrazing which reduces the hardiness and density of forage plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for eastern white pine is moderate. It is low for red maple. Frequent flooding, excess soil moisture, high seedling mortality, and the hazard of windthrow are the main management concerns. Operation of equipment is a management concern because of low soil strength, and should be limited to periods when the soil is dry or frozen. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less.

This map unit has severe limitations for building sites, road construction, and septic tank absorption fields because of wetness, frost action, and the hazard of flooding. Soils that are better suited to development should be selected.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 4w

30B—Raynham silt loam, 0 to 5 percent slopes

This very deep, nearly level to gently sloping, poorly drained soil is in low areas of broad plains. The areas of this soil are irregular in shape and range from 6 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark brown silt loam

Subsoil:
8 to 13 inches, olive silt loam with distinct yellowish brown masses of iron accumulation
13 to 33 inches, light olive gray silt with faint light yellowish brown and prominent yellowish brown masses of iron accumulation

Substratum:
33 to 65 inches, light olive gray silt with faint gray redoximorphic depletions and prominent yellowish brown masses of iron accumulation

In most of the county, this soil has from 3 to 10 percent clay in the subsoil and substratum. In the Boston Basin, this soil has 10 to 16 percent clay in the same part of the soil profile.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Birdsall soils in depressions and Raypol and Wareham soils in similar landscape positions as the Raynham soils. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderately slow or moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: high
Soil reaction: strongly acid to neutral in the surface layer and subsoil, moderately acid to neutral in the substratum
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 0.5 to 1.5 feet, November-May
Hydrologic group: C

Most areas of this map unit are woodland. Some areas are open and idle, and a few small areas are used as cropland.

Due to its wetness, this map unit is best suited to mid- and late-summer pasture. It is not rated for crops.

Potential productivity for both eastern white pine and red maple is moderate. Excess soil moisture and the hazards of windthrow and erosion are the main management concerns. Because of low soil strength, equipment operation is a management concern and should be limited to periods when the soil is dry or frozen. Thinning should be designed to maintain residual stand density at or slightly above standard stocking levels, and to limit changes in stand density to 30 percent or less. These practices, along with choosing cut locations so that the impact of the wind on individual trees is lessened, will help to minimize windthrow.

This map unit has severe limitations for building site development and road construction because of the high water table. Soils that are better suited to these uses should be selected.

This map unit has severe limitations for septic tank absorption fields. The seasonal high water table and restricted permeability of the substratum make installation of onsite sewage disposal systems impractical.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 4w

32B—Wareham loamy fine sand, 0 to 5 percent slopes

This very deep, nearly level to gently sloping, poorly drained soil is in depressions of glacial outwash plains, deltas, and stream terraces. Areas of this soil are irregular in shape and range from 6 to 120 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 10 inches, black loamy fine sand

Subsoil:
10 to 24 inches, brown loamy sand with faint dark yellowish brown masses of iron accumulation and faint grayish brown redoximorphic depletions

Substratum:
24 to 34 inches, light brownish gray stratified fine and medium sand with faint grayish

brown redoximorphic depletions and prominent strong brown masses of iron accumulation

34 to 65 inches, light brownish gray stratified medium and coarse sand with faint grayish brown redoximorphic depletions and prominent strong brown masses of iron accumulation

Included with this soil in mapping are small areas of Deerfield soils at slightly higher elevations than the Wareham soils, Sudbury soils, which have fine textures in the solum, and Scarboro soils in depressions. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: rapid
Available water capacity: moderate
Soil reaction: extremely acid to strongly acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 0.5 to 1.5 feet, September-June
Hydrologic group: C

Most areas of this map unit are woodland. A few areas are used as pasture.

This map unit is poorly suited to cultivated crops and hay, but suited to grasses and legumes that tolerate wetness. Droughtiness is a management concern; irrigation may be needed for optimum plant growth during dry periods. The main pasture management objective should be the prevention of overgrazing that reduces the hardiness and density of desirable plants. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for both eastern white pine and red maple is moderate. High seedling mortality and the hazard of windthrow are the main management concerns. Moisture stress caused by droughtiness because of the soil's low water-holding capacity lowers the productivity of this soil. Equipment operation is a management concern because of low soil strength and should be limited to periods when the soil is dry or frozen. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less.

This map unit has severe limitations for building site development and road construction because of the shallow depth to the saturated zone. Constructing buildings without basements or on fill above the seasonal high water table, will help to avoid interior damage from wetness. Landscaping designed to direct surface water away from buildings will provide added protection against damage caused by soil wetness or frost action.

The shallow depth to the high water table severely limits this map unit's suitability for septic tank absorption fields. As the soil readily absorbs but may not adequately filter effluent, ground water may become polluted. More suitable sewage disposal sites may be nearby.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 4w

33B—Raypol silt loam, 0 to 5 percent slopes

This very deep, nearly level to gently sloping, poorly drained soil is in low areas of broad glacial lake plains and terraces. The areas of this soil are irregular in shape and range from 6 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam

Subsoil:
9 to 19 inches, brown silt loam with distinct very dark grayish brown redoximorphic depletions

Substratum:
19 to 30 inches, dark grayish brown very gravelly loamy sand with prominent yellowish red masses of iron accumulation
30 to 48 inches, dark grayish brown very gravelly loamy sand with prominent yellowish red masses of iron accumulation
48 to 65 inches, dark grayish brown very gravelly loamy sand

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Birdsall soils in depressions, Raynham and Wareham soils in landscape positions similar to those of the Raypol soils, and Tisbury soils at slightly higher elevations. Minor soils comprise about 20 percent of the unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid above a depth of 40 inches; strongly acid to slightly acid below 40 inches
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 0.5 to 1.5 feet, November-May
Hydrologic group: C

Most areas of this map unit are used as woodland. Some areas are open and idle.

This map unit is best suited to mid- and late-summer pasture.

Potential productivity for both eastern white pine and red maple is moderate. Excess soil moisture, high seedling mortality, and the hazard of windthrow are the main management concerns. Equipment operation is a management concern because of low soil strength and is limited to periods when the soil is dry or frozen. Plant competition is a further management concern. Thinning should be designed to maintain residual stand density at or slightly above standard stocking levels and should limit changes in stand density to 30 percent or less. Employing these practices and locating cuts to reduce wind effects, will help to minimize windthrow.

This map unit has severe limitations for building site development and road construction because of the seasonal high water table. A better alternative is to locate buildings on more-suitable soils.

This map unit has severe limitations for septic tank absorption fields. The extent of the high water table makes installation of onsite sewage disposal systems impractical. The rapid permeability of the substratum may result in inadequate filtering of sewage effluent and cause pollution of ground water.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 4w

36A—Saco mucky silt loam, 0 to 1 percent slopes

This very deep, nearly level, very poorly drained soil is on the lowest parts of flood plains adjacent to major streams and rivers. The areas are irregular in shape and follow the course of the stream. They range from 6 to 660 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 13 inches, very dark brown mucky silt loam

Substratum:
13 to 20 inches, very dark gray silt loam with faint dark gray redoximorphic depletions and prominent brown masses of iron accumulation
20 to 30 inches, very dark grayish brown silt loam with faint very dark gray redoximorphic depletions and prominent strong brown masses of iron accumulation
30 to 45 inches, grayish brown silt loam with prominent strong brown masses of iron accumulation
45 to 65 inches, olive gray loamy sand

In many areas, the sandy substratum is within 40 inches of the surface.

Included with this soil in mapping are areas generally smaller than 6 acres each of Freetown and Swansea soils on landscape positions similar to those of the Saco soils. Also included are narrow areas of Limerick soils at slightly higher elevations. Minor soils comprise about 20 percent of the unit.

Major soil properties—

Permeability: moderate in the surface layer, moderate or rapid in the substratum
Available water capacity: very high
Soil reaction: strongly acid to slightly acid above a depth of 30 inches and moderately acid to neutral below 30 inches
Depth to bedrock: more than 60 inches
Depth to seasonal high water table 0 to 0.5 feet, September-June
Flooding: frequent for brief periods
Hydrologic group: D

Most areas of this map unit have a vegetative cover of sedges or wetland shrubs and grasses.

This map unit is unsuited for crop production or pasture. The main management concerns are frequent, brief periods of flooding and a water table that is high for a good portion of the year.

Potential productivity for both eastern white pine and red maple is low. This map unit is subject to flooding, excess soil moisture, high seedling mortality, plant competition, and the hazard of windthrow. Optimum growth and survival are not expected. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

This map unit has severe limitations for building sites, road construction, and septic tank absorption fields because of the seasonal high water table and the hazard of flooding. Soils that are better suited for these uses should be selected.

This map unit has poor potential for woodland wildlife habitat. Extensive areas along the Concord and Sudbury Rivers are publicly owned and controlled to protect fish and wildlife habitat.

Capability subclass: 6w

44A—Birdsall mucky silt loam, 0 to 1 percent slopes

This very deep, nearly level, very poorly drained soil is in low, flat areas and broad depressions on glacial lake plains. Water is at or above the surface for much of the year. The areas are irregular in shape and range from 6 to 65 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 15 inches, black mucky silt loam

Subsurface layer:
15 to 27 inches, gray silt loam with prominent yellowish red masses of iron accumulation
27 to 30 inches, firm light brownish gray silt loam

Substratum:
30 to 65 inches, firm gray silt loam

Included with this soil in mapping are small areas of Scarboro and Swansea soils in landscape positions similar to those of the Birdsall soils, and Wareham and Raypol soils at slightly higher elevations, commonly along the boundaries of the map unit polygon. Minor soils comprise approximately 10 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately slow in the surface layer, moderately slow in the subsoil, slow in the substratum
Available water capacity: high
Soil reaction: very strongly acid to moderately acid in the surface layer, strongly acid to neutral in the subsoil and substratum
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: at the surface, October-July; frequently ponded to a depth of 1 foot for long periods
Hydrologic group: D

Most areas of this map unit are used as woodland. Some areas are open marshland.

This map unit is poorly suited to cropland and pasture because of extreme wetness. The surface of areas of this map unit is frequently covered with ponded water for long periods of time.

Potential productivity for conifers is not rated. Productivity for red maple is low. Excess soil moisture, high seedling mortality, and the hazard of windthrow all severely impact the trees such that optimum growth and survival are not expected. Equipment operation is a management concern because of low soil strength and should be limited to periods when the soil is very dry or frozen. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less. Plant competition is a further management concern. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

Because of its slow percolation qualities and ponded surface water, this map unit has severe limitations for building sites and septic system filter fields. Soils that are better suited for development should be selected.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 5w

51A—Swansea muck, 0 to 1 percent slopes

This very deep, nearly level, very poorly drained soil is in depressions or in low, level areas (fig. 9). The areas are circular or irregular in shape and range from 6 to 160 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 8 inches, black muck
8 to 12 inches, dark reddish brown muck
12 to 23 inches, dark reddish brown muck

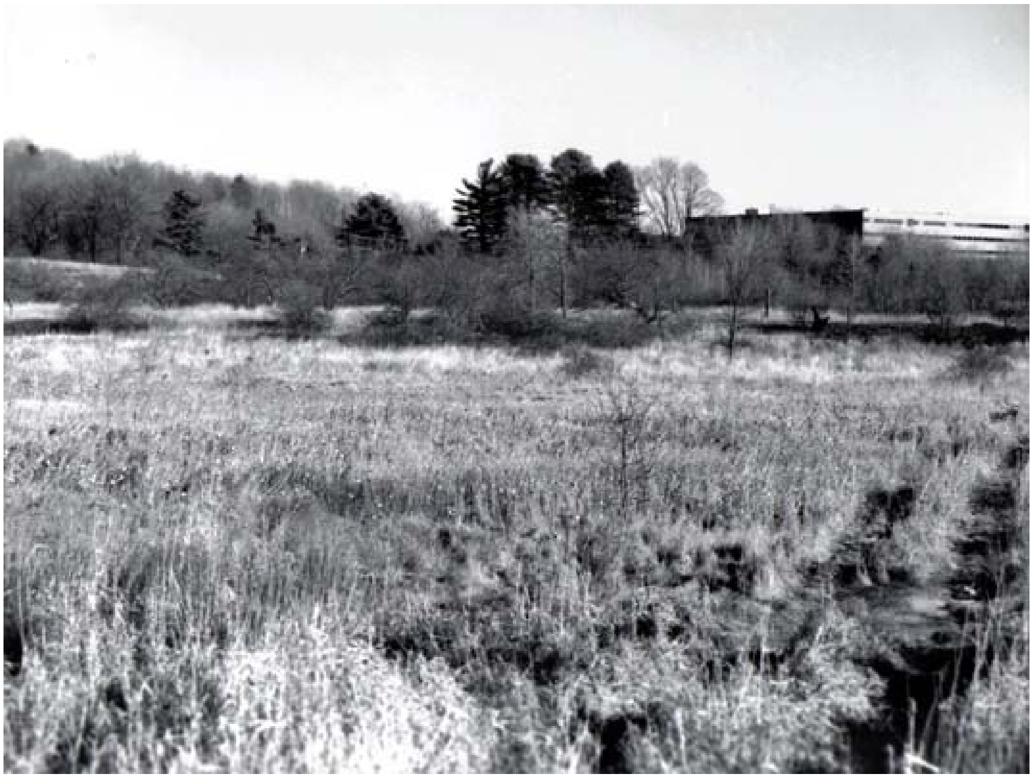

Figure 9.—Poorly drained Wareham and very poorly drained Swansea soils are in the foreground. In the background, Paxton and Woodbridge soils are on the hillside, with commercial development sited on an area of Merrimac-Urban land complex.

Substratum:
23 to 37 inches, gray loamy fine sand with prominent reddish brown and brown masses of iron accumulation
37 to 65 inches, gray gravelly sand with prominent reddish brown and brown masses of iron accumulation

Included with this soil in mapping are areas generally smaller than 6 acres each of Birdsall, Freetown, and Scarboro soils on landscape positions similar to those of the Swansea soils, and Saco soils along streams. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, very rapid in the substratum
Available water capacity: very high
Soil reaction: extremely acid in the organic material and extremely acid to strongly acid in the underlying mineral material
Depth to bedrock: more than 60 inches
Depth to high water table: 0 to 0.5 feet, January-December
Hydrologic group: D

Most areas of this map unit support water-tolerant species of brush and grass. A few areas are covered with trees.

Because of the high water table, this map unit is poorly suited to crop production.

The soil's potential productivity is low for red maple and not rated for white pine. However, potential productivity for red spruce is moderate. The limitations come from excess soil moisture, high seedling mortality, and the hazard of windthrow. Optimum growth and survival are not expected. Operation of equipment is a management concern because of low soil strength and should be limited to periods when the soil is dry or frozen. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

This map unit has severe limitations for building sites because of wetness and low soil strength. It is severely limited for road construction because of frost action, low strength, and the shallow depth to the saturated zone.

This map unit has severe limitations for septic tank absorption fields because of wetness and the soil's poor filtering capacity. Soils that are better suited for development should be selected.

This map unit has poor potential to support woodland wildlife habitat.

Capability subclass: 7w

52A—Freetown muck, 0 to 1 percent slopes

This very deep, nearly level, very poorly drained organic soil is in depressions and along streams and rivers. The areas are irregular in shape and range from 6 to 1,000 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black muck

Subsurface layer:
7 to 9 inches, dark reddish brown (reddish brown rubbed) muck
9 to 34 inches, black (very dark gray rubbed) muck

Bottom layer:
34 to 65 inches, dark reddish brown muck

Included with this soil in mapping are a few small areas of Scarboro and Swansea soils near the edges of some polygons, and a few areas of Freetown, ponded. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: very high
Soil reaction: extremely acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: 0 to 0.5 feet, January-December
Hydrologic group: D

Most areas of this map unit are covered with woodlands or wetland shrubs and grasses.

Because of the high water table, this soil is poorly suited for conventional farming.

Potential productivity for white pine is not rated. However, potential productivity for red spruce is moderate. It is low for red maple. The limitations come from excess soil moisture, high seedling mortality rates, and the hazard of windthrow. Optimum growth and survival are not expected. Operation of equipment is a management concern because of the low soil strength and should be limited to periods when the soil is dry or frozen. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

This map unit has severe limitations for building sites because of wetness and low soil strength. It has severe limitations for septic tank absorption fields because of wetness. Soils that are better suited to these uses should be selected.

This map unit is poorly suited to woodland wildlife habitat.

Capability subclass: 7w

53A—Freetown muck, ponded, 0 to 1 percent slopes

This very deep, nearly level, very poorly drained organic soil is in depressions and along streams and rivers. Water is at or above the surface for much of the year. The areas of the soil are irregular in shape and range from 6 to 150 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black muck

Subsurface layer:
7 to 9 inches, dark reddish brown (reddish brown rubbed) muck
9 to 34 inches, black (very dark gray rubbed) muck

Bottom layer:
34 to 65 inches, dark reddish brown muck

Included with this soil in mapping are a few areas of Scarboro and Swansea soils near the edges of some polygons, and a few areas of Freetown soils that are not ponded. Minor soils comprise about 10 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: very high
Soil reaction: extremely acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: 0 to 0.5 feet, January-December; frequently ponded to a depth of 0 to 3 feet for very long periods
Hydrologic group: D

Most of this map unit is covered with water and has emergent and submergent vegetation typical of freshwater marshes.

This map unit is unsuited to conventional agriculture. The surface of areas of this map unit is frequently covered with ponded water for very long periods.

Volume of wood fiber produced per acre per year is not rated.

Ponded water at the surface and low soil strength severely limit this map unit’s utility for most uses.

This map unit is very poorly suited to woodland wildlife habitat.

Capability subclass: 7w

71B—Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony

This very deep, gently sloping, poorly drained soil is in upland depressions and drainageways (fig. 10). The areas of this soil are irregular in shape or are long and narrow, ranging from 6 to 100 acres in size. Stones and boulders cover 3 to 15 percent of the surface.

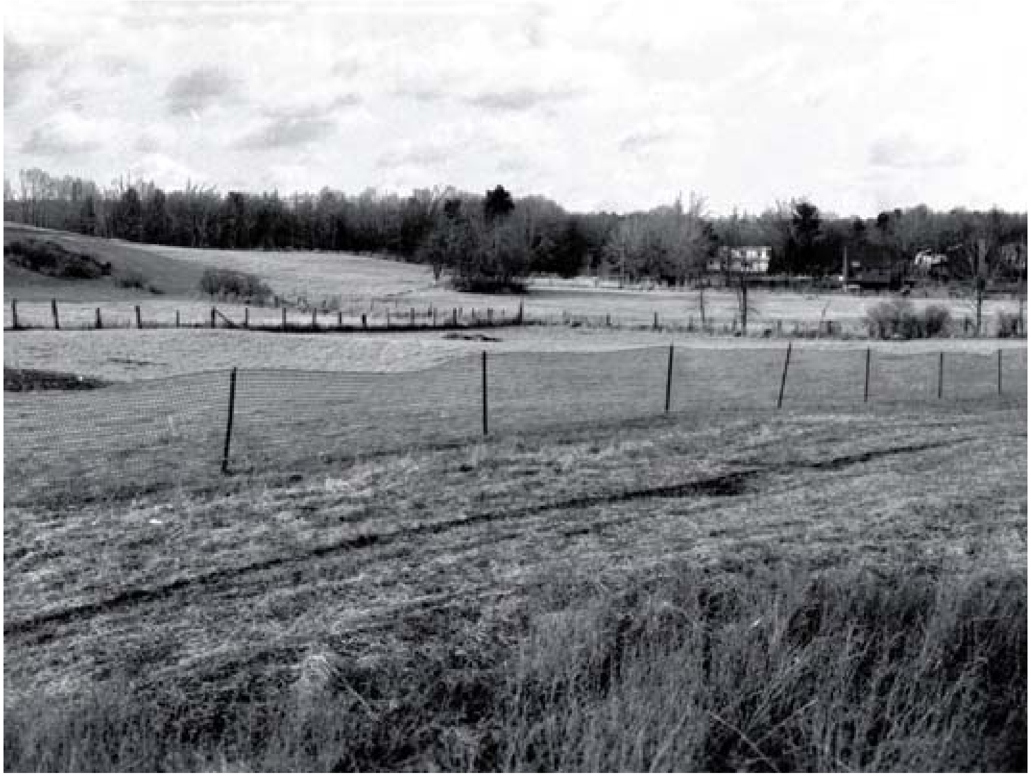

Figure 10.—Ridgebury soils typically occur in low-lying depressions on upland areas.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black fine sandy loam

Subsoil:
7 to 10 inches, brown fine sandy loam with faint grayish brown redoximorphic depletions and prominent red masses of iron accumulation

Substratum:
10 to 25 inches, firm light brownish gray sandy loam with faint grayish brown redoximorphic depletions and prominent yellowish red masses of iron accumulation
25 to 32 inches, firm light brownish gray sandy loam with prominent yellowish red masses of iron accumulation and faint light gray redoximorphic depletions
32 to 65 inches, very firm gray sandy loam with prominent brownish yellow masses of iron accumulation and faint light brownish gray redoximorphic depletions

Included with this soil in mapping are areas, generally smaller than 6 acres each, of extremely stony Whitman soils at the lowest positions of the landscape, and extremely stony Scituate and very stony Woodbridge soils on low knolls. Also included are areas of extremely stony Ridgebury soils with slopes of more than 8 percent, and areas that are free of surface stones. In the northwestern part of the county, the Ridgebury soils have more silt and less sand than their counterparts in the rest of the county. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or very slow in the substratum

Available water capacity: moderate
Soil reaction: very strongly acid or strongly acid in the solum, strongly acid or moderately acid in the substratum
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 0.5 to 1.0 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland.

This map unit is poorly suited to cultivated crops and pasture because of excess wetness and stones and boulders on the surface.

Potential productivity for eastern white pine is moderate. It is moderate for northern red oak. Excess soil moisture, high seedling mortality, and the hazard of windthrow are the main management concerns. The seasonal high water table hinders the operation of equipment, which should be limited to periods when the soil is dry or frozen. Thinning should be designed to minimize windthrow by locating and orienting cuts to reduce wind effects, by keeping residual stand density at or slightly above standard stocking levels, and by limiting changes in stand density to 30 percent or less.

This map unit has severe limitations for use as a building construction site, due to the shallow depth to the saturated zone. The degree of wetness may necessitate the selection of alternative sites for building.

This map unit is severely limited for septic tank absorption fields. The seasonal high water table and restricted permeability of the soil are the main limitations. Additionally, stones and boulders on the surface will hinder all excavation operations.

This map unit has fair suitability for woodland wildlife habitat.

Capability subclass: 7s

73B—Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony

This very deep, nearly level to gently sloping, very poorly drained soil is along drainageways and in depressions on uplands. Water may be ponded on the surface (fig. 11). Areas are long and narrow or irregular in shape and range from 6 to 90 acres in size. Stones and boulders cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—
Surface layer:
0 to 10 inches, very dark gray fine sandy loam

Subsoil:
10 to 14 inches, dark grayish brown sandy loam with faint grayish brown redoximorphic depletions and prominent strong brown masses of iron accumulation
14 to 18 inches, light brownish gray sandy loam with faint dark grayish brown redoximorphic depletions

Substratum:
18 to 29 inches, light brownish gray gravelly sandy loam with prominent strong brown masses of iron accumulation
29 to 65 inches, very firm light brownish gray gravelly sandy loam with prominent yellowish red masses of iron accumulation

Included with this soil in mapping are small areas of extremely stony Ridgebury and Woodbridge soils on low knolls and Birdsall soils along drainageways extending into low plains. Minor soils comprise 20 percent of this map unit.

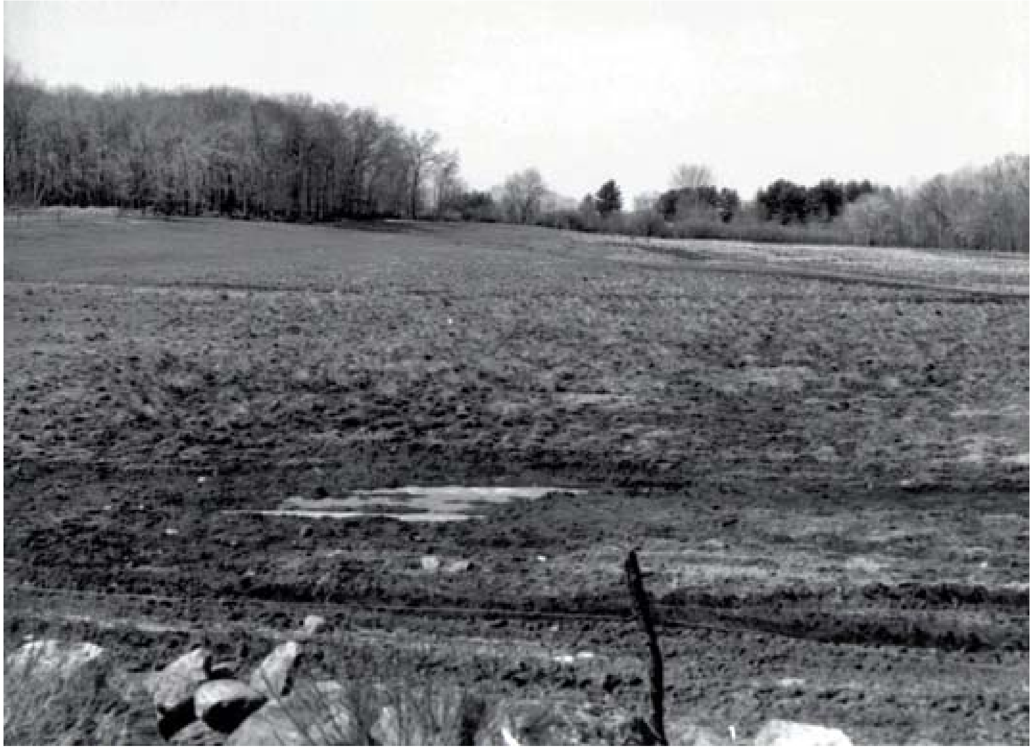

Figure 11.—This pasture land includes very poorly drained Whitman soils in the foreground. The darker tone is indicative of wetness. Moderately well drained Woodbridge and well drained Paxton soils are on the slopes in the background.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: low
Soil reaction: very strongly acid to slightly acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 0 to 0.5 feet, September-June; frequently ponded to a depth of 1 foot for long periods
Hydrologic group: D

Most areas of this map unit are woodland.

This map unit is poorly suited to cultivated crops or pasture because of extreme wetness and surface stones. The surface of areas of this map unit is frequently covered with ponded water for long periods of time.

Potential productivity for eastern white pine is moderate, and is low for red maple. The soils are subject to ponding, high seedling mortality, and the hazard of windthrow. Large stones and boulders on the surface and plant competition are the main management concerns. The large stones and boulders may hinder the use of harvesting and planting equipment. Thinning crowded stands to standard stocking levels will allow more-vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

The tendency of water to pond on the surface of the soil is a severe limitation for building site development. Frost action is another limitation for road construction.

Seasonal ponding and the restricted permeability of the substratum are severe limitations for the installation of septic tank absorption fields.

This map unit is poorly suited for woodland wildlife habitat.

Capability subclass: 7s

97A—Suncook loamy sand, 0 to 3 percent slopes

This very deep, nearly level, excessively drained soil is on high terraces of flood plains adjacent to major rivers. Areas of this soil are long and narrow and range from 6 to 150 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, very dark grayish brown loamy sand

Substratum:
6 to 24 inches, dark yellowish brown coarse sand
24 to 45 inches, light yellowish brown sand
45 to 65 inches, light olive brown coarse sand

Included with this soil in mapping are small areas of Occum soils in nearly level areas at slightly lower elevations than the Suncook soils, and Windsor soils in areas not subject to flooding. Minor soils comprise about 10 percent of the map unit.

Major soil properties—

Permeability: rapid throughout
Available water capacity: low
Soil reaction: very strongly acid to slightly acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 4 to 6 feet, January-April
Flooding: frequent for brief periods
Hydrologic group: A

Most areas of this map unit are cropland or woodland.

This map unit is poorly suited to cultivated crops or pasture. Droughtiness is the major factor limiting use of this soil, and irrigation may be necessary for optimum plant growth. In addition, parts of this map unit are frequently subject to brief periods of flooding. The main objective for pasture management should be the prevention of overgrazing, which reduces the hardiness and density of desirable plants. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for both eastern white pine and red maple is low. The limited production capability is due to moisture stress in the plants, caused by the limited available water capacity of the soil. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to maintain leaf cover helps the soil to absorb and retain precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Periods of brief flooding may restrict the use of machinery used to apply these management practices.

This map unit has severe limitations for building site development because of the hazard of flooding. Constructing roads on raised, coarse-textured fill and providing adequate side ditches and culverts will protect the roads from damage caused by flooding. In addition to the flooding hazard, the soil is severely limited for septic tank absorption fields because its poor filtering capacity can allow groundwater to become polluted. Soils that are better suited for development should be selected.

This map unit is poorly suited for woodland wildlife habitat.

Capability subclass: 3s

98A—Winooski very fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, moderately well drained soil is on flood plains along major rivers. Areas are irregular in shape and range from 6 to 130 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark brown very fine sandy loam

Substratum:
6 to 12 inches, dark yellowish brown very fine sandy loam
12 to 20 inches, yellowish brown very fine sandy loam with distinct olive brown and faint dark yellowish brown masses of iron accumulation and distinct grayish brown redoximorphic depletions in the lower part
20 to 65 inches, light olive brown very fine sandy loam with distinct light olive brown and faint dark yellowish brown masses of iron accumulation and distinct grayish brown redoximorphic depletions

Included with this soil in mapping are small areas of Pootatuck soils in similar landscape positions as the Winooski soils, and Limerick soils in depressions. Minor soils comprise as much as 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid
Available water capacity: high
Soil reaction: very strongly acid to neutral throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 3 feet, November-April
Flooding: frequent for brief periods
Hydrologic group: B

Most areas of this map unit are woodland or cropland.

This map unit is well suited to cultivated crops and pasture. The main management concern is flooding, which is likely to occur briefly in the spring. Drainage is needed for maximum crop yields and for the most efficient use of machinery. The main objective for pasture management should be the prevention of overgrazing that reduces the hardiness and density of forage plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for eastern white pine and northern red oak is high. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Periods of brief flooding restrict the use of machinery used to apply these management practices.

This map unit has severe limitations for use as sites for dwellings without basements because of the hazard of flooding. Wetness is an additional limitation for the construction of dwellings with basements. Constructing roads on raised, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by flooding and frost action.

Wetness and the hazard of flooding are severe limitations for septic tank absorption fields. Soils that are better suited for development should be selected.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2w

99A—Occum very fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, well drained soil is on flood plain terraces along major streams and rivers. The areas of this soil have an irregular shape that follows the course of the adjacent stream. They range from 6 to 70 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown very fine sandy loam

Subsoil:
9 to 21 inches, light olive brown very fine sandy loam

Substratum:
21 to 26 inches, yellowish brown sand
26 to 45 inches, light olive brown fine sand with distinct yellowish brown masses of iron accumulation
45 to 65 inches, light olive brown gravelly loamy sand

Included with this soil in mapping are areas of Suncook soils, generally smaller than 6 acres in size, on elliptical knolls along stream edges, and Charlton soils in bands on the toeslopes of adjacent hills. Also included are areas where slopes are more than 5 percent and areas that are finer-textured throughout. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to slightly acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 4 to 6 feet, November-April
Flooding: frequent for brief periods
Hydrologic group: B

Most areas of this soil are cropland or woodland.

This map unit is well suited to cultivated crops, hay, and pasture. Good tilth is easily maintained in cultivated areas, and the hazard of erosion is slight. Wind erosion is a management issue. Where this map unit is farmed, using cover crops and mixing crop residue and manure into the surface layer help minimize soil loss. Proper stocking rates, deferred grazing, and rotation grazing help maintain desirable pasture plant species.

Potential productivity for eastern white pine is high. It is moderate for northern red oak. Plant competition is a moderate management concern. Thinning crowded stands to more accepted, standard stocking levels will encourage more-vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Periods of brief flooding hinder the use of machinery used to apply these management practices.

This map unit has severe limitations for dwelling construction. Flooding poses the main limitation for building site development. The construction of roads on raised, coarse-textured fill material, and the provision of adequate side ditches and culverts will help protect the roads from flood damage. Soils that are better suited for development should be considered.

This map unit has severe limitations for septic tank absorption fields because of the flooding hazard and because the soils are poor filters of septic tank effluent.

This map unit has few limitations for woodland wildlife habitat.

Capability class: 1

103B—Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes

This unit consists of gently sloping very deep and shallow soils on uplands where the relief is affected by the underlying bedrock. The well drained Charlton soils are on toeslopes and in low pockets. The somewhat excessively drained Hollis soils are on hilltops and ridges. Stones and boulders cover up to 15 percent of the surface. Areas of the map unit are irregular in shape and range from 6 to 180 acres in size. The soils and exposed bedrock are so intermingled that it was not practical to map them separately. This complex is about 50 percent Charlton soils, 25 percent Hollis soils, 15 percent rock outcrop, and 10 percent other soils.

The typical sequence, depth, and composition of the layers of the Charlton soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In the northeastern part of the county, the substratum is typically friable gravelly or very gravelly loamy sand. In some areas, the subsoil is redder.

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock:
14 inches

Some areas have a substratum of pale yellow fine sandy loam.

Included in this complex in mapping are areas, generally smaller than 6 acres in size, of Canton soils, Narragansett soils, and soils that are 20 to 40 inches to bedrock, on similar landscape positions as those of this map unit; Scituate soils, small wet areas, and Woodbridge soils, in depressions; and Montauk soils on smoother parts of the landscape. Minor soils make up about 10 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: Charlton–moderate; Hollis–very low
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: Charlton–more than 60 inches; Hollis–10 to 20 inches
Depth to high water table: more than 6 feet
Hydrologic group: Charlton–B; Hollis—D; Rock outcrop–D

Most areas of this complex are woodland. Some areas are used for homesites.

This map unit is suited to pasture, but exposed bedrock and stones on the surface make the unit poorly suited to cultivated crops.

Potential productivity for the Charlton soils of this map unit is moderate for both eastern white pine and northern red oak. The shallow Hollis soils have low potential productivity for both eastern white pine and northern red oak. The hazard of windthrow is severe on Hollis soils.

The Charlton soil has only slight limitations for dwellings with or without basements, or for local roads and streets. The Hollis soil has severe limitations for dwellings, with or without basements, because the depth to bedrock is less than 20 inches. Suitable homesites may be found in this complex, but lot sizes may need to be larger than customary. The Charlton soil has only slight limitations for septic tank absorption fields, but the Hollis soils have severe limitations because of their shallow depth to bedrock. Intensive onsite investigations may be necessary to find suitable locations for the systems.

The Charlton soils have good potential for woodland wildlife habitat; the Hollis soils have poor potential for this habitat.

Capability subclass: Charlton–6s; Hollis–6s; Rock outcrop–8s

103C—Charlton-Hollis-Rock outcrop complex, 8 to 15 percent slopes

This unit consists of strongly sloping, very deep and shallow soils on uplands where the relief is affected by the underlying bedrock. The well drained Charlton soils are on toeslopes and in low pockets. The somewhat excessively drained Hollis soils are on hilltops and ridges. Stones and boulders cover up to 15 percent of the surface. Areas are irregular in shape and range from 6 to 140 acres in size. The soils and exposed bedrock in this complex are so intermingled that it was not practical to map them separately. This complex is about 50 percent Charlton soils, 25 percent Hollis soils, 15 percent rock outcrop, and 10 percent other soils.

The typical sequence, depth, and composition of the layers of the Charlton soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In the northeastern part of the county, the substratum is typically friable gravelly or very gravelly loamy sand. In some areas, the subsoil is redder.

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—
Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock:
14 inches

Some areas have a substratum of pale yellow fine sandy loam.

Included in this complex in mapping are areas, generally smaller than 6 acres in size, of Canton soils, Narragansett soils, and soils that are 20 to 40 inches to bedrock, on similar landscape positions as those of this map unit; Scituate soils, Woodbridge soils, and small wet areas in depressions; and Montauk soils on smoother parts of the landscape. Minor soils make up about 10 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid
Available water capacity: Charlton–moderate; Hollis–very low
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: Charlton–more than 60 inches; Hollis–10 to 20 inches
Depth to high water table: more than 6 feet
Hydrologic group: Charlton–B; Hollis–D; Rock outcrop–D

Most areas of this map unit are woodland. Some areas are used for homesites.

This map unit is suited to pasture, but exposed bedrock and stones on the surface make it poorly suited to cultivated crops.

Potential productivity for the Charlton soils of this map unit is moderate for both eastern white pine and northern red oak. The shallow Hollis soils have low potential productivity for both eastern white pine and northern red oak. The hazard of windthrow is severe on Hollis soils.

The Charlton soil has moderate limitations for sites for dwellings, with or without basements. The Hollis soil has severe limitations for dwellings and for road construction because of slope and because the bedrock is at a depth of less than 20 inches. Suitable home sites can be located on this map unit, but the use of larger than customary lots may be necessary.

The Charlton soil has moderate limitations for septic tank absorption fields. However, intensive onsite investigations may be necessary to locate these areas while avoiding the Hollis soils, whose shallow depth severely limits their suitability for this use.

The Charlton soils have good potential for woodland wildlife habitat; the Hollis soils have poor potential for this habitat.

Capability subclass: Charlton–6s; Hollis–6s; Rock outcrop–8s

103D—Charlton-Hollis-Rock outcrop complex, 15 to 25 percent slopes

This unit consists of moderately steep, shallow and very deep soils on uplands where the relief is affected by the underlying bedrock. The well drained Charlton soils are on toeslopes and in low pockets. The somewhat excessively drained Hollis soils are on hilltops and ridges. Stones and boulders cover up to 15 percent of the surface. Areas are irregular in shape and range from 6 to 110 acres in size. The soils and exposed bedrock in this complex are so intermingled that it was not practical to map them separately. This complex is about 50 percent Charlton soils, 25 percent Hollis soils, 15 percent rock outcrop, and 10 percent other soils.

The typical sequence, depth, and composition of the layers of the Charlton soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In the northeastern part of the county, the substratum is typically friable gravelly or very gravelly loamy sand. In some areas, the subsoil is redder.

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock: 14 inches

Some areas have a substratum of pale yellow fine sandy loam.

Included in this complex in mapping are areas, generally smaller than 6 acres in size, of Canton soils, Narragansett soils, and soils that are 20 to 40 inches to bedrock, on similar landscape positions as those of this map unit; Woodbridge soils, and small wet areas in depressions; and Montauk soils on smoother parts of the landscape. Minor soils make up about 10 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid
Available water capacity: Charlton–moderate; Hollis–very low
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: Charlton–more than 60 inches; Hollis–10 to 20 inches
Depth to high water table: more than 6 feet
Hydrologic group: Charlton–B; Hollis–D; Rock outcrop–D

Most areas of this complex are woodland. A few small areas are used for homesites.

This map unit is not rated for farming or pasture.

Potential productivity for the Charlton soils of this map unit is moderate for both eastern white pine and northern red oak. The shallow Hollis soils have low potential productivity for both eastern white pine and northern red oak.

Hollis soils also have low available water capacity. Optimum seedling survival and tree growth are not expected. Equipment operations may be restricted because of bedrock outcrops and moderately steep slopes. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

Exposed bedrock, seepage, slope, shallowness to bedrock, and large stones on the surface severely limit this complex's suitability for most other uses. The moderately steep slopes make it necessary to grade and fill before installing foundations and other structures.

This map unit has severely limited suitability for septic tank absorption fields, due to slope, seepage, and the shallowness of the Hollis soils. Installation of septic system distribution lines across the slope is necessary for the system's proper operation.

The Charlton soils have good potential for woodland wildlife habitat; the Hollis soils have poor potential for this habitat.

Capability subclass: Charlton–6s; Hollis–6s; Rock outcrop–8s

104C—Hollis-Rock outcrop-Charlton complex, 3 to 15 percent slopes

This unit consists of rolling, shallow soils, areas of exposed bedrock, and very deep soils on hills and ridges where the relief is affected by the underlying bedrock. The somewhat excessively drained Hollis soils are on the crests of ridges or are near rock outcrops. The well drained Charlton soils are on side slopes or saddles on the landscape. Stones and boulders cover up to 15 percent of the surface. Areas are irregular in shape and range from 6 to 160 acres in size. The soils and exposed bedrock in this complex are so intermingled that it was not practical to map them separately. This complex is about 30 percent Hollis soils, 30 percent rock outcrop, 25 percent Charlton soils, and 15 percent other soils.

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—
Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock: 14 inches

Some areas have a substratum of pale yellow fine sandy loam.

The typical sequence, depth, and composition of the layers of the Charlton soil are as follows—
Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

Included with this complex in mapping are areas, generally smaller than 6 acres each, of soils that are 20 to 40 inches to bedrock, and Canton and Montauk soils on toeslopes and side slopes of the landscape. Also included are areas of Scituate soils in depressions, and small seeps or wet pockets. Minor soils make up about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid
Available water capacity: Hollis–very low; Charlton–moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: Hollis–10 to 20 inches; Charlton–more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: Hollis–D; Charlton–B; Rock outcrop–D

Most areas of this complex are woodland. A few areas are homesites.

This map unit not rated for pasture or cultivated crops. Exposed bedrock and stones and boulders on the surface make pasture maintenance and renovation with conventional farming equipment very difficult.

Potential productivity for the Charlton soils of this map unit is moderate for both eastern white pine and northern red oak. The shallow Hollis soils have low potential productivity for both eastern white pine and northern red oak.

Hollis soils also have low available water capacity. Optimum seedling survival and tree growth are not expected. Equipment operations may be restricted because of bedrock outcrops. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

The slope of the Charlton soils moderately limits their suitability for dwellings with or without basements. The shallow depth to bedrock of the Hollis soils is a severe limitation for dwellings with or without basements. Extensive land shaping and blasting are generally necessary. Constructing roads along the contour where possible and planting well-adapted grasses on road banks will help to reduce the hazard of erosion. The underlying bedrock may hinder road construction in some areas.

Slope and shallow depth to bedrock are severe limitations for septic tank absorption fields on the Hollis soils. Taking advantage of the moderate limitations of the Charlton soil areas and installing the septic system distribution lines across the slope are necessary for proper operation. However, it may be difficult to locate suitable sites for septic tank absorption fields on building lots of less than 2 acres.

The Charlton soils have good potential for woodland wildlife habitat; the Hollis soils have poor potential for this habitat.

Capability subclass: Hollis–6s; Rock outcrop–8s; Charlton–6s

104D—Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes

This unit consists of exposed bedrock and moderately steep, shallow and very deep soils on hills and ridges where the relief is highly affected by the underlying bedrock. The somewhat excessively drained Hollis soils are on the crests of ridges or are near rock outcrops. The well drained Charlton soils are on side slopes and footslopes. Stones and boulders cover up to 15 percent of the surface. Areas are irregular in shape and range from 6 to 150 acres in size. The soils and exposed bedrock in this complex are so intermingled that it was not practical to map them separately. This complex is about 30 percent Hollis soils, 30 percent rock outcrop, 25 percent Charlton, and 15 percent other soils.

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock: 14 inches

Some areas have a substratum of pale yellow fine sandy loam.

The typical sequence, depth, and composition of the layers of the Charlton soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

Included with this complex in mapping are areas, generally smaller than 6 acres each, of Canton and Montauk soils on side slopes, soils that are 20 to 40 inches deep to bedrock, and small seeps or wet pockets. Minor soils make up about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid
Available water capacity: Hollis–very low; Charlton–moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: Hollis–10 to 20 inches; Charlton–more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: Hollis–D; Charlton–B; Rock outcrop–D

Most of this complex is woodland.

This map unit is not rated for pasture or cultivated crops. Exposed bedrock and stones and boulders on the surface make pasture maintenance and renovation with conventional farming equipment very difficult.

Potential productivity for the Charlton soils of this map unit is moderate for both eastern white pine and northern red oak. The shallow Hollis soils have low potential productivity for both eastern white pine and northern red oak. Hollis soils also have low available water capacity. In general, this map unit has severe limitations for woodland management and productivity because of its steep slopes. Optimum seedling survival and plant growth are not expected. Equipment operations are restricted by steep slopes and bedrock outcrops. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

Slope and shallow depth to bedrock are severely limiting factors on building sites. Extensive land shaping and blasting of bedrock are generally necessary. Constructing roads along the contour where possible and planting well-adapted grasses on road banks will help to reduce the hazard of erosion. The underlying bedrock may hinder road construction in some areas. It is impractical to construct septic tank absorption fields in most areas of the map unit, as the underlying bedrock and steepness of slope are severe limitations for septic systems.

The Charlton soils have good potential for woodland wildlife habitat; the Hollis soils have poor potential for this habitat.

Capability subclass: Hollis–6s; Rock outcrop–8s; Charlton–6s

105E—Rock outcrop-Hollis complex, 3 to 35 percent slopes

This map unit consists of rolling to steep, shallow, somewhat excessively drained Hollis soils and exposed bedrock. This complex is on ridge crests of upland hills. Areas are long and narrow or irregular in shape and range from 6 to 350 acres in size. The soils and exposed bedrock in this complex are so intermingled that it was not practical to map them separately. This complex is about 50 percent rock outcrop, 45 percent Hollis soils, and 5 percent other soils.

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock: 14 inches

Some areas have a substratum of pale yellow fine sandy loam.

Included with this complex in mapping are areas generally smaller than 6 acres each of Whitman and Swansea soils in depressions. Also included are areas of soils that are 20 to 40 inches deep to bedrock. In some areas, slopes range up to 45 percent. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid
Available water capacity: very low
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: 10 to 20 inches
Depth to high water table: more than 6 feet
Hydrologic group: Hollis–D; Rock outcrop–D

Most areas of this map unit are woodland. Some areas are parks and reservations. A few small areas are used as sites for radio, TV, or microwave transmission towers.

This map unit is suited to pasture, but steep slopes, exposed bedrock, and stones and boulders on the surface make pasture maintenance and renovation with conventional farming equipment very difficult. This complex is not rated for cultivated crops.

Hollis soils have low potential productivity for both eastern white pine and northern red oak, as these soils are less than 20 inches to bedrock and have low available water capacity. Optimum seedling survival and plant growth are not expected. Equipment operations may be restricted because of bedrock outcrops. Onsite investigations may reveal that tree plantings are practical if special treatment is used.

Due to extensive bedrock exposures and shallow soils, this complex has severe limitations for most uses. It has severe limitations for septic tank absorption fields because of slope and shallow soil depth.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: Rock outcrop–8s; Hollis–6s

106C—Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes

This map unit consists of rolling, very deep and shallow soils on uplands where the relief is affected by the surface of the underlying bedrock. The well drained Narragansett soils are in low pockets on toeslopes. The somewhat excessively drained Hollis soils are on the crests of hills and ridges. Stones and boulders cover up to 3 percent of the surface. Areas are irregular in shape and range from 6 to 270 acres in size. The soils and exposed bedrock are so intermingled that it was not practical to map them separately. This complex is about 45 percent Narragansett soils, 20 percent Hollis soils, 10 percent rock outcrop, and 25 percent other soils.

The typical sequence, depth, and composition of the layers of the Narragansett soil are as follows—

Surface layers:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock: 14 inches

The Hollis soils in this map unit commonly have more silt in the surface layer and upper part of the subsoil than is typical (fig. 12). Some areas have a substratum of pale yellow fine sandy loam.

Included with this complex in mapping are small areas of Canton and Charlton soils in similar landscape positions as those of the Narragansett and Hollis soils, and Scituate soils in depressions. Also included are soils that are 20 to 40 inches deep to bedrock. Minor soils make up about 25 percent of the map unit.

Major soil properties—

Permeability: Narragansett–moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, and moderately rapid or rapid in the substratum; Hollis–moderate or moderately rapid throughout
Available water capacity: Narragansett–high; Hollis–very low
Soil reaction: Narragansett–extremely acid to moderately acid throughout; Hollis–very strongly acid to moderately acid throughout
Depth to bedrock: Narragansett–more than 60 inches; Hollis–10 to 20 inches
Depth to high water table: more than 6 feet
Hydrologic group: Narragansett–B; Hollis–D; Rock outcrop–D

Most areas of this map unit are woodland, though some areas are homesites. A few small areas are hayland or pasture.

This map unit is suited to pasture, but has exposed bedrock and stones on the surface. It is not rated for cultivated crops.

The Narragansett soils have moderate potential productivity for both eastern white pine and northern red oak. The Hollis soils are less than 20 inches deep and have low available water capacity. Therefore, they have low potential productivity for both eastern white pine and northern red oak. Plant competition at the time of regeneration is moderate if conifers are grown. The hazard of windthrow is severe on Hollis soils. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones and exposed bedrock hinder the use of harvesting and planting equipment.

The Narragansett soil has moderate limitations as a site for dwellings, with or without basements, due to slope. The Hollis soil has severe limitations for dwellings with basements because bedrock is at a depth of less than 20 inches. Suitable homesites can be located in this map unit, but the use of larger than customary lot sizes may be necessary. The Narragansett soil has moderate limitations as a site for local streets and roads, due to slope and frost action. The Hollis soil has severe limitations because bedrock is at a depth of less than 20 inches.

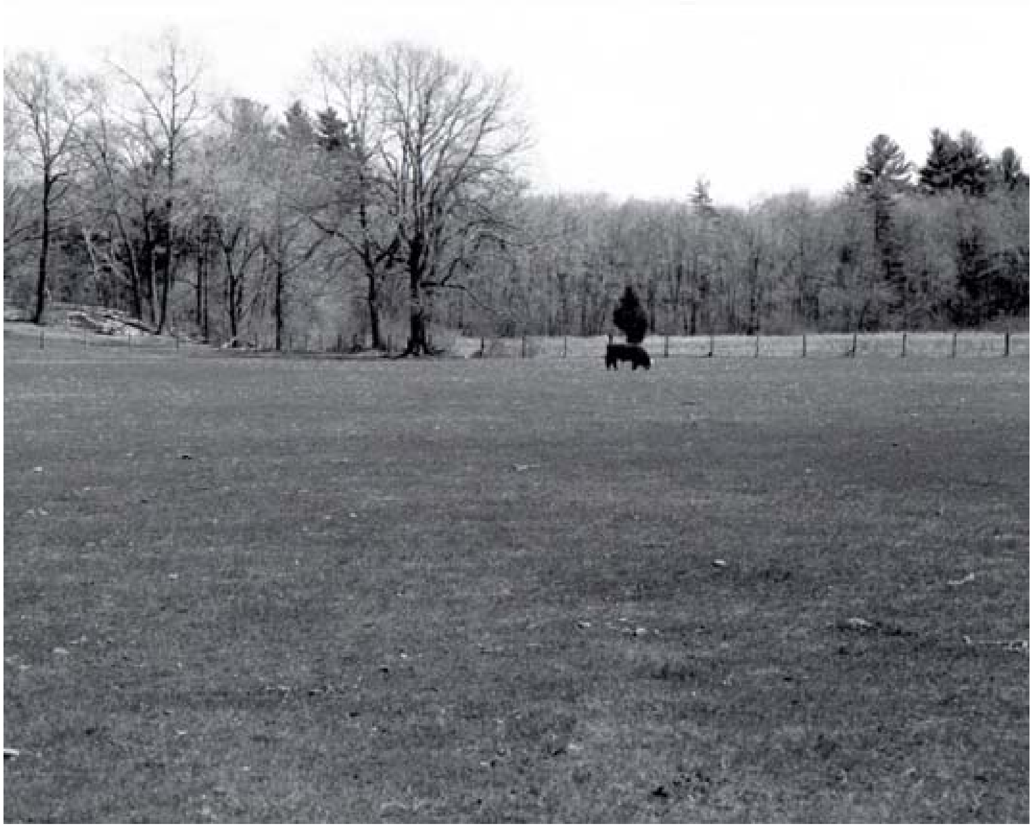

Figure 12.—The pasture in the foreground is part of a unit of Haven silt loam, 0 to 3 percent slopes. The rise to the left is an area of Narragansett-Hollis-Rock outcrop complex. The soils behind the grazing animal are Raypol silt loam.

The Narragansett soil has moderate limitations for septic tank absorption fields due to its slope and poor filtering qualities. Intensive onsite investigations may be necessary to locate areas suitable for the purpose, as the shallow Hollis soils have severe limitations for use as sites for septic systems.

The Narragansett soil has good potential for woodland wildlife habitat. The Hollis soil has poor potential for woodland wildlife habitat.

Capability subclass: Narragansett–6s; Hollis–6s; Rock outcrop–8s

106D—Narragansett-Hollis-Rock outcrop complex, 15 to 25 percent slopes

This map unit consists of moderately steep, very deep and shallow soils on uplands where the relief is affected by the surface of the underlying bedrock. The well drained Narragansett soils are in low pockets on toeslopes. The somewhat excessively drained Hollis soils are on the crests of hills and ridges. Stones and boulders cover up to 3 percent of the ground surface. Areas are irregular in shape and range from 6 to 310 acres in size. The soils and exposed bedrock are so intermingled that it was not practical to map them separately. This complex is about 45 percent Narragansett soils, 20 percent Hollis soils, 10 percent rock outcrop, and 25 percent other soils.

The typical sequence, depth, and composition of the layers of the Narragansett soil are as follows—

Surface layers:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock: 14 inches

The Hollis soils in this complex commonly have more silt in the surface layer and upper part of the subsoil than is typical. Some areas have a substratum of pale yellow fine sandy loam.

Included with this complex in mapping are small areas of Canton and Charlton soils in similar landscape positions as the Narragansett and Hollis soils. Also included are soils that are 20 to 40 inches deep to bedrock. Minor soils make up about 25 percent of the map unit.

Major soil properties—

Permeability: Narragansett–moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, moderately rapid or rapid in the substratum; Hollis–moderate or moderately rapid throughout
Available water capacity: Narragansett–high; Hollis–very low
Soil reaction: Narragansett–extremely acid to moderately acid throughout; Hollis–very strongly acid to moderately acid throughout
Depth to bedrock: Narragansett–more than 60 inches; Hollis–10 to 20 inches
Depth to high water table: more than 6 feet
Hydrologic group: Narragansett–B; Hollis–D; Rock outcrop–D

Most areas of this complex are woodland.

This map unit is suited to pasture but is poorly suited to cultivated crops because of exposed bedrock and steep slopes.

The Narragansett soils have moderate potential productivity for both eastern white pine and northern red oak. The Hollis soils have low potential productivity for both eastern white pine and northern red oak, as Hollis soils are less than 20 inches deep and have low available water capacity. Plant competition at the time of regeneration is moderate if conifers are grown. The hazard of windthrow is severe on Hollis soils. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones and exposed bedrock hinder the use of harvesting and planting equipment.

Slope, exposed bedrock, shallow depth to bedrock, and stones and boulders on the surface severely limit this map unit for most uses. Steep slopes make it necessary to grade and fill before installing foundations and other structures.

This complex has severe limitations for septic tank absorption fields. Installing distribution lines across the slope is necessary for proper operation of septic systems.

The Narragansett areas of this map unit have good potential for woodland wildlife habitat. The Hollis soils have poor potential for woodland wildlife habitat.

Capability subclass: Narragansett—6s; Hollis—6s; Rock outcrop—8s

223A—Scio very fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, moderately well drained soil is in shallow depressions on plains and on tops of stream terraces. The areas of this soil are irregular in shape and range from 6 to 90 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown very fine sandy loam

Subsoil:
8 to 22 inches, olive very fine sandy loam with faint olive gray redoximorphic depletions
22 to 35 inches, olive very fine sandy loam with faint pale olive masses of iron accumulation and distinct grayish brown redoximorphic depletions

Substratum:
35 to 65 inches, pale olive silt loam with faint olive masses of iron accumulation and faint olive gray redoximorphic depletions

A few areas have more sand in the surface layer and subsoil.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Haven soils on subtle rises and Sudbury and Tisbury soils in similar landscape positions as the Scio soils. Minor soils comprise about 20 percent of the unit.

Major soil properties—

Permeability: moderate throughout
Available water capacity: high
Soil reaction: very strongly acid or strongly acid above a depth of 30 inches, and strongly acid or moderately acid below 30 inches
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, March-May
Flooding: none
Hydrologic group: B

Most areas of this map unit are cropland or abandoned cropland (fig. 13). A few areas are woodland.

This map unit is well suited to cultivated crops and suited to pasture. The seasonal high water table is a management concern, as it may delay planting or harvesting. Drainage is needed for maximum crop yield and efficient use of machinery. Most forage grasses are suited for the soil in an undrained state.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

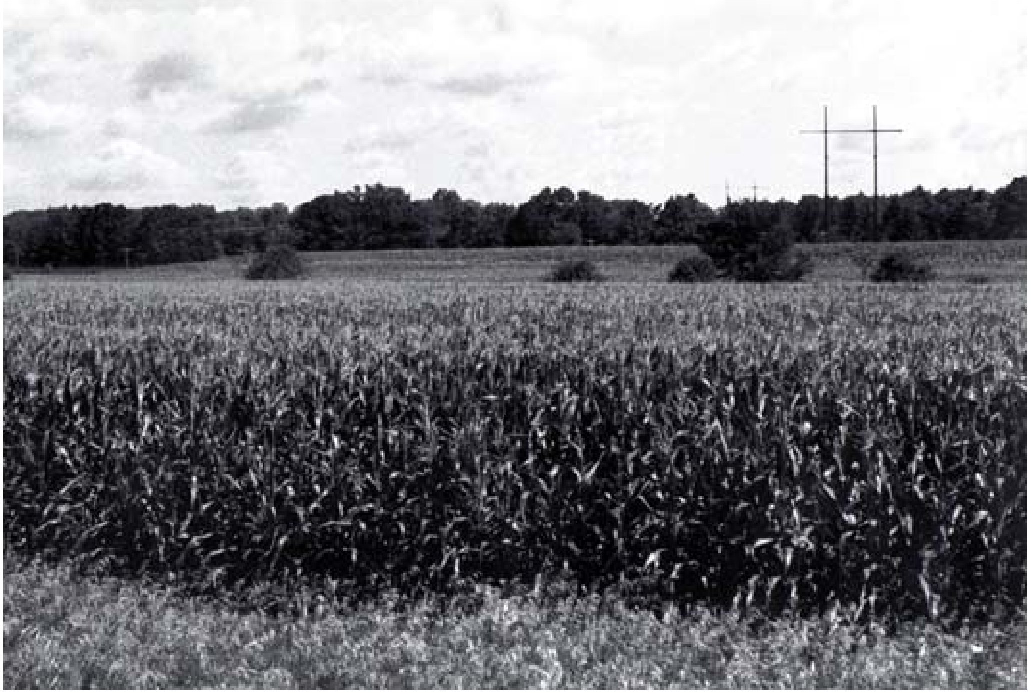

Figure 13.—Corn is growing on Scio very fine sandy loam, 0 to 3 percent slopes.

This map unit has severe limitations for the construction of dwellings with basements, due to wetness. Constructing buildings with basement floors above the seasonal high water table will help to avoid interior damage caused by wetness. The placement of footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection. Constructing roads on well-compacted, coarse-textured base material will help protect the roads from frost damage, which is a severe limitation.

This map unit is severely limited as a site for septic tank absorption fields. Seepage and a seasonally high water table are the main limitations. Placing leach fields in a mound of more suitable fill material will help to overcome the limitations of the soil.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2w

223B—Scio very fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is in shallow depressions on plains and on tops of stream terraces. The areas of this soil are irregular in shape and range from 6 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown very fine sandy loam

Subsoil:
8 to 22 inches, olive very fine sandy loam with faint olive gray redoximorphic depletions
22 to 35 inches, olive very fine sandy loam with faint pale olive masses of iron accumulation and distinct grayish brown redoximorphic depletions

Substratum:
35 to 65 inches, pale olive silt loam with faint olive masses of iron accumulation and faint olive gray redoximorphic depletions

A few areas have more sand in the surface layer and subsoil.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Haven soils on subtle rises and Sudbury and Tisbury soils in similar landscape positions as the Scio soils. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderate throughout
Available water capacity: high
Soil reaction: very strongly acid or strongly acid above a depth of 30 inches, strongly acid or moderately acid below 30 inches
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, March-May
Flooding: none
Hydrologic group: B

Most areas of this map unit are cropland or abandoned cropland. A few areas are woodland.

This map unit is well suited to cultivated crops and suited to pasture. The seasonal high water table is a management concern, as it may delay planting or harvesting. This map unit is suited for most forage grasses. Conservation tillage, contour farming, cover crops, and diversions help to control erosion.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Wetness is a moderate limitation for the construction of dwellings without basements, and a severe limitation for the construction of dwellings with basements. Constructing buildings with basement floors above the seasonal high water table will help to avoid interior damage caused by the high water. The placement of footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection. Constructing roads on well-compacted, coarse-textured base material will help protect the roads from frost damage, which is a severe limitation.

This map unit has severe limitations for septic tank absorption fields. Seepage and a seasonally high water table are the main limitations. Placing leaching facilities in a mound of more suitable fill material will help to overcome these impediments.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

251A—Haven silt loam, 0 to 3 percent slopes

This very deep, nearly level, well drained soil is on glacial outwash plains and terraces (fig. 14). The areas of this soil are irregular in shape and range from 6 to 210 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, black silt loam

Subsoil:
2 to 20 inches, yellowish brown silt loam
20 to 32 inches, olive yellow very fine sandy loam

Substratum:
32 to 45 inches, olive yellow fine sand
45 to 65 inches, light yellowish brown stratified medium and coarse sand

Included with this soil in mapping are areas of Merrimac soils, generally smaller than 6 acres in size, with a lower water-holding capacity, and small areas of Scio soils at slightly lower elevations on the landscape. Also included are areas where the solum extends to a depth of 40 inches or more and has more silt. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the solum, very rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

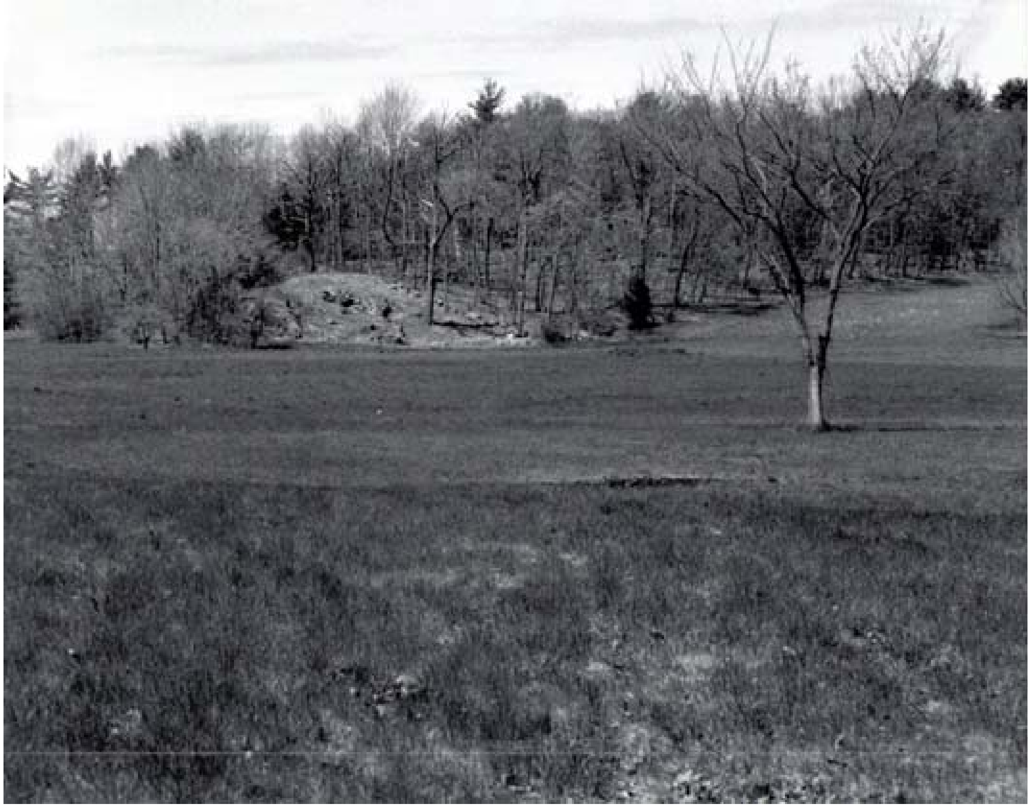

Figure 14.—An area of Haven silt loam, 0 to 3 percent slopes, is in the foreground. The wooded area in the background is a unit of Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes.

Many areas of this map unit are used for homesites, though some areas are cropland. A few areas are woodland.

This map unit is well suited to cultivated crops and pasture. Irrigation may not be necessary in years when rainfall is evenly distributed over the growing season. Motorized equipment is easily operated on this nearly level terrain.

Potential productivity is high for eastern white pine, and moderate for northern red oak. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Pruning can be used to improve the quality of white pine.

This map unit has slight limitations for use as a site for the construction of dwellings. It has moderate limitations for road construction, due to frost action.

This map unit has severe limitations for septic tank absorption fields, as the soil readily absorbs but is a poor filter of sewage effluent. This inadequate filtering capability may result in the pollution of ground water.

This map unit has good potential for woodland wildlife habitat.

Capability class: 1

251B—Haven silt loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on glacial outwash plains and terraces. The areas of this soil are irregular in shape and range from 6 to 135 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, black silt loam

Subsoil:
2 to 20 inches, yellowish brown silt loam
20 to 32 inches, olive yellow very fine sandy loam

Substratum:
32 to 45 inches, olive yellow fine sand
45 to 65 inches, light yellowish brown stratified medium and coarse sand

Included with this soil in mapping are areas where the surface layer and subsoil extend to a depth of 40 inches or more and have a higher content of silt. Also included are areas of Merrimac soils, generally smaller than 6 acres each, which have a lower water-holding capacity, and small areas of Scio soils at slightly lower elevations on the landscape. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil and very rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Many areas of this map unit are used for homesites. Some areas are cropland, and a few areas remain as woodland.

This map unit is well suited to cultivated crops and pasture. Irrigation may not be necessary in years when rainfall is evenly distributed over the growing season. Motorized equipment is easily operated on these slopes.

Potential productivity is high for eastern white pine and moderate for northern red oak. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Pruning can be used to improve the quality of white pine.

This map unit has slight limitations for the construction of dwellings. It has moderate limitations for road construction, due to frost action.

These soils have severe limitations for septic tank absorption fields, as they readily absorb but are a poor filter of effluent. The inadequate filtering capability may result in pollution of the ground water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

253A—Hinckley loamy sand, 0 to 3 percent slopes

This very deep, nearly level, excessively drained soil is on glacial outwash plains and terraces. The areas are irregular in shape and range from 6 to 165 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark brown loamy sand

Subsoil:
7 to 17 inches, yellowish brown very gravelly loamy sand

Substratum:
17 to 65 inches, olive brown stratified extremely gravelly sand

Included with this soil in mapping are small areas of Merrimac, Windsor, and Quonset soils in similar landscape positions as the Hinckley soils, and Sudbury and Deerfield soils in depressions. Minor soils make up about 20 percent of the map unit.

Major soil properties—

Permeability: rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: strongly acid or moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are used for homesites. Some sections are cropland, pasture, or woodland.

This map unit is poorly suited for silage corn or legume hay, but may be suited for sweet corn. Droughtiness is a management concern; irrigation may be needed for optimum plant growth. Minimum tillage, cover crops, and contour farming will help reduce erosion. The main management objective for pasture should be the prevention of overgrazing, which reduces the hardiness and density of plants. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for eastern white pine is moderate. It is low for northern red oak because of moisture stress caused by the soil's limited available water capacity. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain the surface mulch of leaves, and designing regeneration cuts to optimize shade and reduce evapotranspiration, will help to retain the limited soil moisture.

This map unit has slight limitations for the construction of dwellings and of local roads. It has severe limitations for septic tank absorption fields, as it readily absorbs but is a poor filter of sewage effluent. The soil's inadequate filtering capability can result in pollution of ground water.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 3s

253B—Hinckley loamy sand, 3 to 8 percent slopes

This very deep, gently sloping, excessively drained soil is on glacial outwash plains and terraces. Areas of this soil are irregular in shape and range from 6 to 360 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark brown loamy sand

Subsoil:
7 to 17 inches, yellowish brown very gravelly loamy sand

Substratum:
17 to 65 inches, olive brown stratified extremely gravelly sand

Included with this soil in mapping are small areas of Carver, Merrimac, Windsor, and Quonset soils in similar landscape positions as the Hinckley soils, and Sudbury and Deerfield soils in depressions. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: strongly acid or moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are used for homesites. Some areas are cropland, pasture, or woodland.

This map unit is poorly suited to silage corn or pasture, but suited to sweet corn. Droughtiness and a low content of plant nutrients are management concerns; irrigation, fertilizer, and the incorporation of plant residue into the plow layer are needed. Minimum tillage, cover crops, and contour farming will help reduce erosion. The main management objective for pasture should be the prevention of overgrazing which reduces the hardiness and density of plants. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for eastern white pine is moderate. It is low for northern red oak because of moisture stress caused by the soil's limited available water capacity. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal in thinning operations. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain the surface mulch of leaves to absorb precipitation, and designing regeneration cuts to optimize shade and reduce evapotranspiration, will help to retain the limited soil moisture.

This map unit has slight limitations for the construction of dwellings and for local roads and streets. It has severe limitations for septic tank absorption fields, as the soils readily absorb but are poor filters of sewage effluent. The soil's inadequate filtering capability can result in pollution of ground water.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 3s

253C—Hinckley loamy sand, 8 to 15 percent slopes

This very deep, strongly sloping, excessively drained soil is on glacial stream terraces and long sinuous ridges. Areas of this soil are irregular in shape and range from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark brown loamy sand

Subsoil:
7 to 17 inches, yellowish brown very gravelly loamy sand

Substratum:
17 to 65 inches, olive brown stratified extremely gravelly sand

Included with this soil in mapping are small areas of Carver, Merrimac, Windsor, Canton, and Quonset soils in similar landscape positions as the Hinckley soils, and Sudbury soils in depressions. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: strongly acid or moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. A few areas are used for homesites.

This map unit is not rated for cultivated crops, and is poorly suited to pasture. Droughtiness, slope, and a low content of plant nutrients are management concerns; irrigation, fertilizer, and the incorporation of plant residue into the plow layer are needed. Irrigation is needed for optimum plant growth but is difficult to apply because of the slope. Stripcropping and crop rotations that are mostly of hay will help to reduce runoff and control erosion.

Potential productivity for eastern white pine is moderate. It is low for northern red oak due to moisture stress caused by the soil's limited available water capacity. Thinning crowded stands to accepted, standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain the surface mulch of leaves and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

Slope is a moderate limitation for the construction of buildings. Designing dwellings and small commercial buildings to conform to the natural slope of the land will help to overcome this limitation and will also reduce soil erosion in areas of disturbed soil. Constructing roads along the contour where possible and planting well-adapted grasses and legumes on road banks will help to reduce erosion.

This map unit has severe limitations for septic tank absorption fields, as it readily absorbs but is a poor filter of sewage effluent, which can result in pollution of ground water. Installing distribution lines across the slope or using seepage pits will help to overcome the slope limitation.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 4s

253D—Hinckley loamy sand, 15 to 25 percent slopes

This very deep, moderately steep, excessively drained soil is on escarpments and side slopes of glacial outwash terraces, mounds, and long sinuous ridges. Areas of this soil are irregular in shape and range from 6 to 150 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark brown loamy sand

Subsoil:
7 to 17 inches, yellowish brown very gravelly loamy sand

Substratum:
17 to 65 inches, olive brown stratified extremely gravelly sand

Included with this soil in mapping are small areas of Carver, Merrimac, Windsor, and Quonset soils in similar landscape positions as the Hinckley soils. Minor soils comprise about 30 percent of the map unit.

Major soil properties—

Permeability: rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: strongly acid or moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. A few areas are used for homesites.

Droughtiness, a low content of plant nutrients, and highly erodible steep slopes make this map unit poorly suited to cultivated crops, hay, or improved pasture. Irrigation is needed for optimum plant growth but is impractical to apply because of the slope. The rapid permeability causes plant nutrients to pass readily through the soil. Stripcropping and crop rotations that are mostly hay will help to reduce runoff and control erosion.

Potential productivity for eastern white pine is moderate. It is low for northern red oak because of moisture stress caused by the soil's limited available water capacity. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain the surface mulch of leaves and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Constructing access roads and trails with grades of between 2 and 10 percent and installing water bars will help to prevent excessive soil erosion.

Slope is a severe limitation for building sites and construction of local roads. Extensive land shaping is generally needed. Buildings and lots designed to conform to the natural slope of the land will help to overcome the slope limitation and reduce the hazard of erosion in areas of disturbed soil. Large amounts of cut and fill are generally needed when constructing roads on this map unit.

This map unit also has severe limitations for septic tank absorption fields, as its slopes are steep, and the soils absorb but are poor filters of sewage effluent. The inadequate filtering capability can cause a hazard of pollution to ground water. Installing distribution lines across the slope or using seepage pits will help to lessen the severity of the slope limitation, but additional precautionary measures may be necessary to reduce the hazard of pollution.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 6s

253E—Hinckley loamy sand, 25 to 35 percent slopes

This very deep, steep, excessively drained soil is on side slopes of escarpments, mounds, and long sinuous ridges. Areas of this soil are irregular in shape and range from 6 to 70 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark brown loamy sand

Subsoil:
7 to 17 inches, yellowish brown very gravelly loamy sand

Substratum:
17 to 65 inches, olive brown stratified extremely gravelly sand

Included with this soil in mapping are small areas of Carver, Windsor, and Quonset soils in similar landscape positions as the Hinckley soils. Minor soils comprise about 30 percent of the map unit.

Major soil properties—

Permeability: rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: strongly acid or moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland.

Droughtiness, steep slopes, and high erodibility make farming impractical on this map unit.

Potential productivity for eastern white pine is moderate. Productivity is low for northern red oak because of moisture stress caused by the soil's limited available water capacity. The steep slopes prohibit the use of conventional harvesting equipment. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain the surface mulch of leaves and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Constructing access roads and trails with grades of between 2 and 10 percent and installing water bars will help to prevent excessive soil erosion.

Slope is a severe limitation for building sites and roads; extensive land shaping is generally needed. Designing buildings and lots so that they conform to the slope of the land can reduce the hazard of erosion where the soils have been disturbed.

Steep slopes make it impractical to install sewage disposal systems. The poor filtering capacity of the soils poses additional severe limitations for septic tank absorption fields, as the inadequate filtering capability can result in pollution of ground water.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 7s

254A—Merrimac fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, somewhat excessively drained soil is on outwash plains and glacial stream terraces that commonly follow major stream valleys. The areas are irregular or rounded in shape, and range from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown fine sandy loam

Subsoil:
9 to 18 inches, dark yellowish brown gravelly sandy loam
18 to 26 inches, dark yellowish brown very gravelly loamy coarse sand

Substratum:
26 to 33 inches, light yellowish brown very gravelly coarse sand
33 to 65 inches, light olive brown gravelly coarse sand

Included with this soil in mapping are small areas of Sudbury soils in low areas and depressions and Hinckley and Windsor soils on knolls and hummocks. Also included are areas with deeper subsoil. In the Assabet River Valley, the substratum is finer textured. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer, moderately rapid or rapid in the subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid
Depth to bedrock: more than 60 inches

Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are homesites. Some areas are farmed, and a few are woodland.

This map unit is suited to silage corn or pasture, and well suited for sweet corn, but droughtiness is a management concern. Irrigation is necessary for optimum plant growth. Mixing crop residues and manure into the surface layer will increase the water holding capacity. The main pasture management objective is the prevention of overgrazing. Using rotation grazing and restricting grazing during dry periods will help to maintain desirable plant densities and hardiness.

Potential productivity for eastern white pine is moderate. It is low for northern red oak. Seedling mortality is moderate because of the droughtiness of this soil. Minimizing soil disturbance will help to maintain leaf cover, resulting in increased absorption and retention of precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Conifers generally grow faster on this soil than hardwoods.

This map unit has only slight limitations for the construction of dwellings or for road construction. However, it has severe limitations for septic tank absorption fields, as the soil readily absorbs, but is a poor filter of effluent. This inadequate filtering capability can result in pollution of ground water.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 2s

254B—Merrimac fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, somewhat excessively drained soil is on outwash plains and glacial stream terraces that commonly follow major stream valleys. The areas are irregular or rounded in shape, and range from 6 to 210 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown fine sandy loam

Subsoil:
9 to 18 inches, dark yellowish brown gravelly sandy loam
18 to 26 inches, dark yellowish brown very gravelly loamy coarse sand

Substratum:
26 to 33 inches, light yellowish brown very gravelly coarse sand
33 to 65 inches, light olive brown gravelly coarse sand

Included with this soil in mapping are small areas of Sudbury soils in low areas and depressions and Hinckley and Windsor soils on knolls and hummocks. Also included are areas with deeper subsoil. In the Assabet River Valley, the substratum is finer textured. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer, moderately rapid or rapid in the subsoil, rapid in the substratum
Available water capacity: moderate

Soil reaction: extremely acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are homesites. Some areas are farmed, and a few are woodland.

This map unit is suited to silage corn, hay, or pasture, and well suited for sweet corn. Droughtiness and erosion are management concerns. Irrigation is necessary for optimum plant growth. Farming on the contour, stripcropping, and using cover crops and legumes in the cropping system will help to reduce runoff and control erosion where the soil has been exposed. Mixing crop residues and manure into the surface layer will increase the water holding capacity. The main pasture management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during dry periods will help to maintain desirable plant densities and hardiness.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, as conifers generally grow faster on this soil than hardwoods. Seedling mortality is moderate because of the droughtiness of this soil. Minimizing soil disturbance will help to maintain leaf cover, resulting in increased absorption and retention of precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Thinning crowded stands, especially of diseased, poorly formed or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has only slight limitations for the construction of dwellings or for road construction. The soils' poor filtering capacity is a severe limitation for septic tank absorption fields. Ground water may become polluted, as the soil readily absorbs but is a poor filter of sewage effluent.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 2s

254C—Merrimac fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, somewhat excessively drained soil is on the side slopes of glacial stream terraces that commonly follow major stream valleys. The areas are irregular or elongated in shape, and range from 6 to 35 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown fine sandy loam

Subsoil:
9 to 18 inches, dark yellowish brown gravelly sandy loam
18 to 26 inches, dark yellowish brown very gravelly loamy coarse sand

Substratum:
26 to 33 inches, light yellowish brown very gravelly coarse sand
33 to 65 inches, light olive brown gravelly coarse sand

Included with this soil in mapping are small areas of Hinckley and Windsor soils on the tops of knolls and hummocks. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer, moderately rapid or rapid in the subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are homesites. Some areas are cropland, pasture, or woodland.

This map unit is suited to silage corn, hay, and pasture, and well suited for sweet corn, but the soils are highly erodible. Farming on the contour, diversions, stripcropping, and growing cover crops and legumes in the cropping system help to reduce runoff and control erosion. Irrigation is necessary for optimum crop production but may be difficult to apply because of the steepness of the slope. Mixing crop residues and manure into the surface layer will increase the water holding capacity. The main management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during dry periods will help to maintain desirable plant densities and hardiness.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, as conifers generally grow faster on this soil than hardwoods. Seedling mortality is moderate because of the droughtiness of this soil. Minimizing soil disturbance will help to maintain leaf cover, resulting in increased absorption and retention of precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Thinning crowded stands, especially of diseased, poorly formed or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Constructing access roads and trails along the contour and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion.

Slope poses moderate limitations for the construction of dwellings and roads. Designing buildings and streets to conform to the natural shape of the land will help to overcome the slope limitation and reduce the hazard of erosion. Planting well-adapted grasses on road banks and other disturbed areas will help to reduce soil loss.

This map unit has severe limitations for septic tank absorption fields, as it readily absorbs but may not adequately filter the effluent, which can result in pollution of ground water and nearby wells. Installing the distribution lines along the contour, or using seepage pits will help to overcome the limitation posed by the slope.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 3e

255A—Windsor loamy sand, 0 to 3 percent slopes

This very deep, nearly level, excessively drained soil is on glacial outwash plains and the tops of glacial stream terraces and deltas. The areas of this soil are rounded or irregular in shape and range from 6 to 280 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark brown loamy sand

Subsoil:
8 to 16 inches, yellowish brown loamy sand
16 to 23 inches, light olive brown sand

Substratum:
23 to 30 inches, light yellowish brown gravelly sand
30 to 65 inches, light yellowish brown sand

Included with this soil in mapping are small areas of Deerfield soils in low areas and depressions, Merrimac and Hinckley soils on low knolls and hummocks, and Carver soils in similar landscape positions as the Windsor soils. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: rapid
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid in the surface layer and subsoil, strongly acid to slightly acid in the substratum
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. Some areas are cropland or pasture, and some are homesites. A few areas are used as a source of sand.

This map unit has fair suitability for the cultivation of silage corn, is not rated for sweet corn, and has poor suitability for improved pasture. Droughtiness and the prevention of overgrazing are management concerns. Irrigation is necessary for optimum crop production. Using rotation grazing and restricting grazing will help to maintain the hardiness and density of desirable plants.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, because of moisture stress caused by the limited available water capacity of the soil. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Maintaining leaf cover by minimizing soil disturbance helps to absorb and retain precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

This map unit has slight limitations for dwelling or local road construction. The soils are severely limited for septic tank absorption fields, as they readily absorb but may not adequately filter sewage effluent. The inadequate filtering can result in the pollution of ground water.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 3s

255B—Windsor loamy sand, 3 to 8 percent slopes

This very deep, gently sloping, excessively drained soil is on glacial outwash plains and on the tops of glacial stream terraces and deltas. The areas of this soil are rounded or irregular in shape and range from 6 to 380 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark brown loamy sand

Subsoil:
8 to 16 inches, yellowish brown loamy sand
16 to 23 inches, light olive brown sand

Substratum:
23 to 30 inches, light yellowish brown gravelly sand
30 to 65 inches, light yellowish brown sand

Included with this soil in mapping are small areas of Deerfield soils in depressions, Merrimac and Hinckley soils on low knolls and hummocks, and Carver soils in similar landscape positions as the Windsor soils. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: rapid
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid in the surface layer and subsoil, strongly acid to slightly acid in the substratum
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. Some areas are cropland, pasture, or homesites. A few areas are sandpits.

This map unit is poorly suited to the cultivation of silage corn and is not rated for sweet corn; irrigation is necessary for optimum crop production. Droughtiness makes these soils poorly suited for improved pasture. The main pasture management concern is the prevention of overgrazing. Rotational and restricted grazing will help to maintain the hardiness and density of desirable plants.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, because of moisture stress caused by the limited available water capacity of the soil. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Maintaining leaf cover by minimizing soil disturbance helps to absorb and retain precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

This map unit has only slight limitations for the construction of dwellings or local roads. This map unit has severe limitations for septic tank absorption fields, as the soil readily absorbs but is a poor filter of sewage effluent. This inadequate filtration capacity can result in the pollution of ground water. Low-density development and larger lot sizes can help to reduce the impact on ground water.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 3s

255C—Windsor loamy sand, 8 to 15 percent slopes

This very deep, strongly sloping, excessively drained soil is on side slopes of glacial outwash terraces and deltas. The areas of this soil are rounded or irregular in shape and range from 6 to 95 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark brown loamy sand

Subsoil:
8 to 16 inches, yellowish brown loamy sand
16 to 23 inches, light olive brown sand

Substratum:
23 to 30 inches, light yellowish brown gravelly sand
30 to 65 inches, light yellowish brown sand

Included with this soil in mapping are small areas of Carver and Hinckley soils in similar landscape positions as the Windsor soils. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: rapid
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid in the surface layer and subsoil, strongly acid to slightly acid in the substratum
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland, though some areas are homesites. A few areas are used as sources of sand.

This map unit is poorly suited to cultivated crops or pasture because of its limited available water capacity. Irrigation is necessary for optimum crop production. Growing cover crops, using conservation tillage, stripcropping and contour farming will help to minimize erosion. The main pasture management concern is the prevention of overgrazing. Rotation grazing and restricted grazing will help to maintain the hardiness and density of desirable plants.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, because of moisture stress caused by the limited available water capacity of the soil. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Maintaining leaf cover by minimizing soil disturbance helps to absorb and retain precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Constructing access roads and trails along the contour, installing water bars, and minimizing soil disturbance will help to reduce runoff and erosion.

Slope poses moderate limitations for the construction of dwellings and local roads. Designing buildings to conform to the natural shape of the land will help to overcome the slope limitation and reduce the hazard of erosion in disturbed areas. Designing roads to run along the contours and planting road banks and other disturbed areas with well-adapted grasses will also help to reduce this hazard.

This soil is severely limited for septic tank absorption fields, as the soil readily absorbs but may not adequately filter sewage effluent. The inadequate filtering can result in the pollution of ground water. Low-density development and large lot size can help to reduce the impact on ground water. Installing septic system distribution lines along the contour or using seepage pits is generally necessary to overcome the slope limitation.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 4s

256A—Deerfield loamy sand, 0 to 3 percent slopes

This very deep, nearly level, moderately well drained soil is in depressions on glacial stream terraces and deltas. The areas of this soil are irregular in shape and range from 6 to 450 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 1 inch, slightly decomposed leaf litter
1 to 11 inches, very dark gray loamy sand

Subsoil:
11 to 17 inches, yellowish brown loamy sand
17 to 25 inches, yellowish brown sand with distinct strong brown masses of iron accumulation

Substratum:
25 to 65 inches, light brownish gray coarse sand with prominent strong brown masses of iron accumulation

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Sudbury soils in similar landscape positions as the Deerfield soils, and Wareham soils at slightly lower elevations. Minor soils comprise about 10 percent of the map unit.

Major soil properties—

Permeability: moderate to rapid in the surface layers, rapid in the subsoil, very rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 3 feet, December-April
Hydrologic group: B

Most areas of this soil are woodland. A few small areas are used for commercial and industrial development.

This soil is suited for the cultivation of silage corn, well suited for the production of sweet corn, and limited in its use for hay and pasture. The seasonal high water table delays farming and limits root growth in the spring. This soil must be irrigated during dry periods for optimal crop growth. The main management concern is the prevention of overgrazing, particularly during droughty periods, as this reduces the hardiness and density of desirable plants. Proper stocking rates, timely grazing, and restricting use during adverse moisture periods help maintain plant densities.

Potential productivity for both eastern white pine and northern red oak is moderate. Seedling mortality is moderate because of moisture stress caused by the droughtiness of the soil. Minimizing disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Thinning crowded stands to standard stocking levels will allow more vigorous new growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has moderate limitations as a site for dwellings without basements, due to wetness. It has severe limitations for dwellings with basements. Constructing buildings with basement floors above the seasonal high water table will help to avoid interior damage caused by wetness. Footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection from moisture. Constructing roads on raised, coarse-textured base material and providing adequate side ditches and culverts will help to overcome the moderate wetness limitation and protect the roads from frost damage.

This map unit has severe limitations for septic tank absorption fields, as the soil readily absorbs but may not adequately filter sewage effluent, which can lead to pollution of ground water. Shallow depth to the saturated zone is a further severe limitation; placing distribution lines in a mound of more suitable fill material will help to overcome the wetness limitation.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 3w

256B—Deerfield loamy sand, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is in depressions on glacial stream terraces and deltas. The areas of this soil are irregular in shape and range from 6 to 60 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 1 inch, slightly decomposed leaf litter
1 to 11 inches, very dark gray loamy sand

Subsoil:
11 to 17 inches, yellowish brown loamy sand
17 to 25 inches, yellowish brown sand with distinct strong brown masses of iron accumulation

Substratum:
25 to 65 inches, light brownish gray coarse sand with prominent strong brown masses of iron accumulation

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Sudbury soils in similar landscape positions as the Deerfield soils, and Wareham soils at slightly lower elevations. Minor soils comprise about 10 percent of the map unit.

Major soil properties—

Permeability: moderate to rapid in the surface layers, rapid in the subsoil, very rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 3 feet, December-April
Hydrologic group: B

Most areas of this map unit are woodland. A few small areas are used for commercial and industrial development.

This map unit is suited for the cultivation of silage corn, well suited for sweet corn, and of limited use for hay and pasture. The seasonal high water table delays farming and limits root growth in the spring. This map unit must be irrigated during dry periods for optimal crop growth. The main management concern is the prevention of overgrazing, particularly during droughty periods, as this reduces the hardiness and density of desirable plants. Proper stocking rates, timely grazing, and restricting use during low moisture periods help maintain plant densities.

Potential productivity for both eastern white pine and northern red oak is moderate. Seedling mortality is moderate because of moisture stress caused by the droughtiness of the soil. Minimizing disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has moderate limitations as a site for the construction of dwellings without basements, and severe limitations for the construction of dwellings with basements. Constructing buildings with basement floors above the seasonal high water table will help to avoid interior damage caused by wetness. Footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection. Constructing roads on raised, coarse-textured base material and providing adequate side ditches and culverts will help to overcome the moderate wetness limitation and protect the roads from frost damage.

This map unit has severe limitations for septic tank absorption fields, as it readily absorbs but may not adequately filter sewage effluent. This inadequate filtering capability may cause pollution of ground water. Shallow depth to the saturated zone is a further severe limitation; placing distribution lines in a mound of more suitable fill material will help to overcome the wetness limitation.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 3w

259A—Carver loamy coarse sand, 0 to 3 percent slopes

This very deep, nearly level, excessively drained soil is on glacial outwash plains, terraces, and deltas. The areas of this soil are rounded or irregular in shape and range from 6 to 180 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown loamy coarse sand

Subsoil:
7 to 13 inches, yellowish brown loamy coarse sand
13 to 21 inches, yellowish brown coarse sand

Substratum:
21 to 35 inches, light yellowish brown gravelly coarse sand
35 to 65 inches, light yellowish brown coarse sand

Included with this soil in mapping are areas, generally smaller than 6 acres, of Deerfield soils in low areas and depressions, Hinckley and Quonset soils on low knolls and hummocks, and Windsor soils in similar landscape positions as the Carver soils. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: very rapid throughout
Available water capacity: very low

Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. Some areas are cropland or pasture, and some are used for homesites. A few areas are used as sources of sand.

This map unit is poorly suited to cultivated crops and pasture, as it is limited by droughtiness. Irrigation is necessary for optimum plant growth. The main pasture management objective should be the prevention of overgrazing that reduces hardiness and density of plants.

The potential productivity of hardwoods is not rated for this soil. The potential productivity of eastern white pine is low because of moisture stress caused by the limited available water capacity of the soil. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Maintaining leaf cover by minimizing soil disturbance helps to absorb and retain precipitation. Designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

This map unit has only slight limitations as a site for dwellings or local roads. It has severe limitations for septic tank absorption fields, as it readily absorbs but may not adequately filter sewage effluent, causing pollution of ground water. Low density development can help to reduce the impact on ground water.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 4s

259B—Carver loamy coarse sand, 3 to 8 percent slopes

This very deep, gently sloping, excessively drained soil is on glacial outwash plains, terraces, and deltas. The areas of this soil are rounded or irregular in shape and range from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown loamy coarse sand

Subsoil:
7 to 13 inches, yellowish brown loamy coarse sand
13 to 21 inches, yellowish brown coarse sand

Substratum:
21 to 35 inches, light yellowish brown gravelly coarse sand
35 to 65 inches, light yellowish brown coarse sand

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Deerfield soils in low areas and depressions, Hinckley and Quonset soils on low knolls and hummocks, and Windsor soils in similar landscape positions as those of the Carver soils. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: very rapid throughout
Available water capacity: very low

Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. Some areas are cropland or pasture, and some are used for homesites. A few areas are used as sources of sand.

This map unit is poorly suited to cultivated crops and pasture, as it is limited by droughtiness. Irrigation is necessary for optimum plant growth. The main pasture management objective should be the prevention of overgrazing that reduces hardiness and density of plants.

Potential productivity for eastern white pine is low because of moisture stress caused by the limited available water capacity of the soil. This map unit is not rated for hardwoods. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

This map unit has only slight limitations for the construction of dwellings or local roads. It has severe limitations for septic tank absorption fields, as the soil readily absorbs but is a poor filter of sewage effluent, with the potential for causing pollution of ground water. Low density development can help to reduce this impact.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 4s

259C—Carver loamy coarse sand, 8 to 15 percent slopes

This very deep, strongly sloping, excessively drained soil is on glacial outwash plains, terraces, and deltas. The areas of this soil are rounded or irregular in shape and range from 6 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown loamy coarse sand

Subsoil:
7 to 13 inches, yellowish brown loamy coarse sand
13 to 21 inches, yellowish brown coarse sand

Substratum:

21 to 35 inches, light yellowish brown gravelly coarse sand
35 to 65 inches, light yellowish brown coarse sand

Included with this soil in mapping are areas of Hinckley and Quonset soils on low knolls. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: very rapid throughout
Available water capacity: very low
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches

Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. Some areas are cropland or pasture, and some are used for homesites. A few areas are used as sources of sand.

This map unit is poorly suited to cultivated crops and pasture, as its production capabilities are limited by droughtiness. Irrigation is necessary for optimum plant growth. The main management objective for pasture should be the prevention of overgrazing that reduces hardiness and density of plants.

Potential productivity for eastern white pine is low because of moisture stress caused by the limited available water capacity of the soil. This map unit is not rated for hardwoods. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

This map unit has moderate limitations as a site for dwellings or local roads, due to its slope. This map unit has severe limitations for septic tank absorption fields, as it readily absorbs but is a poor filter of sewage effluent, which may cause pollution of ground water. Low density development and larger lot sizes can help to reduce this hazard.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 7s

260B—Sudbury fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is in low areas and shallow depressions on glacial outwash plains and terraces. The areas of this soil are irregular in shape and range from 6 to 60 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark brown fine sandy loam

Subsoil:
8 to 20 inches, yellowish brown fine sandy loam
20 to 27 inches, light olive brown loamy sand with prominent yellowish brown masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Substratum:
27 to 30 inches, light yellowish brown gravelly coarse sand with prominent yellowish brown masses of iron accumulation
30 to 37 inches, light olive brown medium sand
37 to 65 inches, light olive brown gravelly coarse sand with prominent yellowish brown masses of iron accumulation and distinct light olive gray redoximorphic depletions

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Merrimac and Wareham soils. Merrimac soils are typically in higher positions on the landscape than the Sudbury soils, and Wareham soils are in lower positions. Also included are Windsor soils, which have more sand in the surface layer and subsoil, areas with a finer-textured or firm substratum with slow permeability, and areas where some layers have iron accumulations. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer, moderately rapid or rapid in the subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 3 feet, December-April
Hydrologic group: B

Most areas of this map unit are woodland, though some areas are used for homesites. A few areas are cropland (fig. 15) or pasture.

This map unit is suited to silage corn, and well suited for sweet corn, hay, or pasture. Wetness is the major management concern, and subsurface drains are needed for best production of row crops. Farming along the contour and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and erosion. Grazing should be restricted when the soil is wet.

Potential productivity for eastern white pine is moderate. It is low for northern red oak. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to standard stocking levels will allow for growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Pruning can be used to improve the quality of white pine.

This map unit has moderate limitations for the construction of dwellings without basements, but severe limitations for the construction of dwellings with basements, as

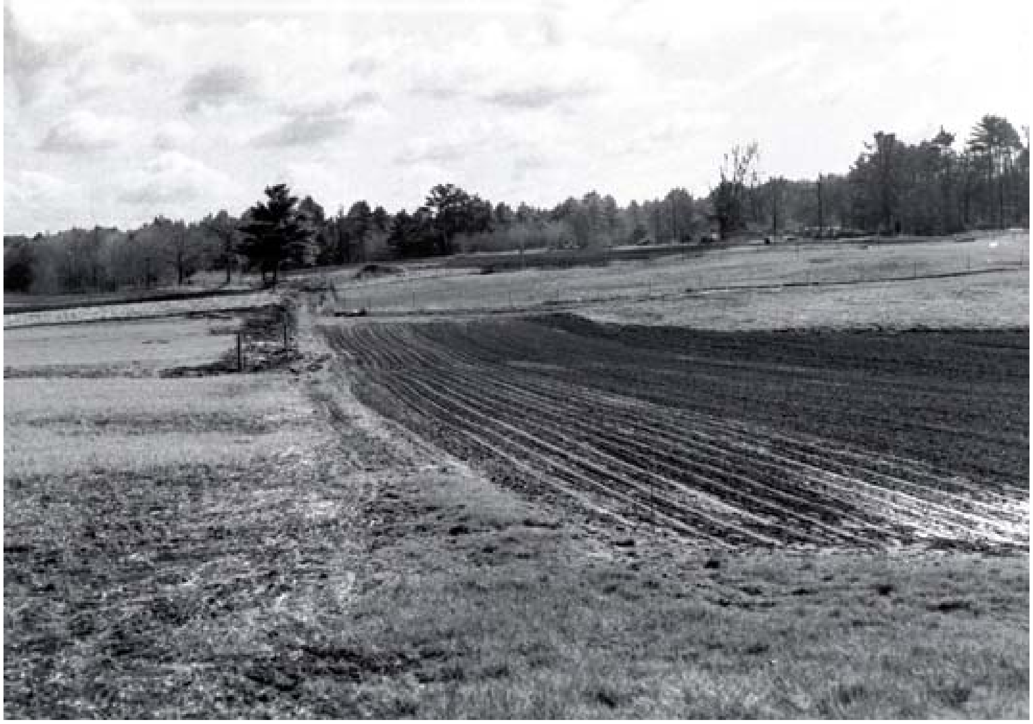

Figure 15.—Soils that formed in sandy glacial outwash material are used here for crop production. Moderately well drained Sudbury soils are in the foreground, while somewhat excessively drained Merrimac soils are in the background.

they are subject to interior damage caused by the seasonal high water table. Footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection. Constructing roads on raised, coarse-textured base material and providing adequate side ditches and culverts will help to overcome the moderate wetness limitation and protect the roads from frost damage.

This map unit has severe limitations for septic tank absorption fields, mainly because of the seasonal high water table and inadequate filtering capacity of the soil. This inadequate filtering may result in the pollution of ground water. Placing septic system distribution lines in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

261A—Tisbury silt loam, 0 to 3 percent slopes

This very deep, nearly level, moderately well drained soil is in low areas of glacial outwash plains and terraces. The areas of this soil are irregular in shape and range from 6 to 60 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsoil:
8 to 14 inches, yellowish brown very fine sandy loam
14 to 21 inches, olive yellow very fine sandy loam
21 to 28 inches, olive yellow very fine sandy loam with prominent light gray redoximorphic depletions and prominent reddish yellow and yellowish red masses of iron accumulation
28 to 34 inches, light yellowish brown very fine sandy loam with distinct light gray redoximorphic depletions

Substratum:
34 to 44 inches, brownish yellow very gravelly sand
44 to 65 inches, light yellowish brown very gravelly sand with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Scio soils in similar landscape positions as those of the Tisbury soils. Also included are small areas of Raypol and Wareham soils at lower elevations on the landscape where the seasonal high water table is at or near the surface most of the year. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, rapid in the substratum
Available water capacity: high
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2.5 feet, November-April
Hydrologic group: B

Most areas of this map unit are woodland. Some areas are homesites or cropland.

This map unit is well suited to cultivated crops or pasture, and suited for most forage grasses. Planting or harvesting may be delayed by the seasonal high water table. Drainage is needed for maximum crop yield and efficient use of machinery.

Potential productivity for both eastern white pine and northern red oak is high. The high productivity of this soil justifies intensive management for conifers. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has severe limitations for the construction of dwellings with basements. Constructing buildings, either without basements or above the level of the seasonal high water table, will help to avoid interior damage caused by the shallow depth to ground water. Footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection. Susceptibility to frost action is a severe limitation for roadways. Constructing roads on well-compacted, coarse-textured base material will help protect the roads from frost damage.

This map unit has severe limitations for septic tank absorption fields. A seasonal high water table and poor filtering capacity are the main limitations. As this map unit readily absorbs but may not adequately filter sewage effluent, the inadequate filtering capacity may result in the pollution of ground water. Placing distribution lines in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2w

261B—Tisbury silt loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is in low areas of glacial outwash plains and terraces. The areas of this soil are irregular in shape and range from 6 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsoil:
8 to 14 inches, yellowish brown very fine sandy loam
14 to 21 inches, olive yellow very fine sandy loam
21 to 28 inches, olive yellow very fine sandy loam with prominent light gray redoximorphic depletions and prominent reddish yellow and yellowish red masses of iron accumulation
28 to 34 inches, light yellowish brown very fine sandy loam with distinct light gray redoximorphic depletions

Substratum:
34 to 44 inches, brownish yellow very gravelly sand
44 to 65 inches, light yellowish brown very gravelly sand with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Scio soils in similar landscape positions as those of the Tisbury soils. Also included are small areas of Raypol and Wareham soils at lower elevations on the landscape, where the seasonal high water table is at or near the surface most of the year. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, rapid in the substratum
Available water capacity: high
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2.5 feet, November-April
Hydrologic group: B

Most areas of this soil are woodland, though some areas are homesites or cropland.

This map unit is well suited to cultivated crops and suited to pasture and most forage grasses. Planting or harvesting may be delayed by the seasonal high water table, which also impacts crop yield and efficient use of machinery.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has severe limitations for the construction of dwellings with basements, and moderate limitations for the construction of dwellings without basements. Constructing buildings, either without basements or above the seasonal high water table, will help to avoid interior damage caused by wetness. Footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection. Frost action is a severe limitation for the construction of local roads and streets. Constructing roads on well-compacted, coarse-textured base material will help protect the roads from frost damage.

This map unit has severe limitations for septic tank absorption fields because of the seasonal high water table and the soil's poor filtering capacity. As these soils readily absorb but may not adequately filter sewage effluent, their inadequate filtering capacity may result in the pollution of ground water. Placing distribution lines in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

262B—Quonset sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, excessively drained soil is on glacial outwash plains, terraces, mounds, and long sinuous ridges in the Boston Basin and the northeastern part of the county. The areas of this soil are irregular in shape and range from 6 to 250 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown channery loamy sand
18 to 28 inches, yellowish brown very channery loamy sand

Substratum:
28 to 65 inches, olive brown very channery sand

Many areas have a surface layer of loamy sand, and some areas have fine sandy loam in the subsoil. Dark channers and flags of phyllite, schist, shale, and slate make up 50 to 75 percent of the coarse fragments.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Canton soils in similar landscape positions as the Quonset soils, and Sudbury soils in depressions. Also included are very small areas where the soil is less than 60 inches deep to bedrock, and areas that have finer textures in the surface layer and subsoil. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderately rapid or rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: extremely acid to strongly acid in the surface layer, extremely acid to moderately acid in the subsoil, and extremely acid to slightly acid in the substratum
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are homesites. Some areas are cropland, pasture, or woodland.

This map unit is poorly suited for silage corn and hay and suited for sweet corn. The droughtiness of this map unit requires that irrigation be applied for optimum plant growth. Minimum tillage, cover crops, and contour farming will help reduce erosion. This map unit is poorly suited to pasture; the main management objective should be the prevention of overgrazing which reduces hardiness and density of plants. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, due to moisture stress caused by the soil's limited available water capacity. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

This map unit has slight limitations for dwellings with or without basements or for siting local roads. It has severe limitations for septic tank absorption fields, as the soils readily absorb but are poor filters of sewage effluent. This inadequate filtering capability may result in the pollution of ground water.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 3s

262C—Quonset sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, excessively drained soil is on glacial outwash plains, terraces, mounds, and long sinuous ridges in the Boston Basin and the northeastern part of the county. The areas of this soil are irregular in shape and range from 6 to 110 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown channery loamy sand
18 to 28 inches, yellowish brown very channery loamy sand

Substratum:
28 to 65 inches, olive brown very channery sand

Many areas have a surface layer of loamy sand; and some areas have fine sandy loam in the subsoil. Dark channers and flags of phyllite, schist, shale, and slate make up 50 to 75 percent of the coarse fragments.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Canton and Hinckley soils in similar landscape positions as the Quonset soils, and Sudbury soils in depressions. Also included are areas that have finer texture in the surface layer and subsoil. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderately rapid or rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: extremely acid to strongly acid in the surface layer, extremely acid to moderately acid in the subsoil, and extremely acid to slightly acid in the substratum
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit remain as woodland. A few areas are used for homesites.

This map unit is not rated for cropland, and is poorly suited to pasture. Droughtiness and slope are the main limitations. Irrigation is needed for optimum plant growth, but water is difficult to apply because of the steepness of the slope.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, because of moisture stress caused by the limited available water capacity of the soil. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

This map unit has moderate limitations as a site for the construction of dwellings. Designing buildings to conform to the natural slope of the land will help to overcome the slope limitation and reduce the erosion hazard in disturbed areas. Land shaping may be necessary in some locations. Constructing roads on the contour where possible and planting well-adapted grasses on road banks will help to reduce the hazard of erosion.

This map unit has severe limitations for septic tank absorption fields, as installations will require grading or filling or both. This map unit readily absorbs but is a poor filter of sewage effluent. This inadequate treatment capability may result in the pollution of ground water. Low density development can reduce this impact.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 4s

262D—Quonset sandy loam, 15 to 25 percent slopes

This very deep, moderately steep, excessively drained soil is on glacial outwash plains, terraces, mounds, and long sinuous ridges in the Boston Basin and the northeastern part of the county. The areas of this soil are irregular in shape and range from 6 to 150 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown channery loamy sand
18 to 28 inches, yellowish brown very channery loamy sand

Substratum:
28 to 65 inches, olive brown very channery sand

Many areas have a surface layer of loamy sand. Dark channers and flags of phyllite, schist, shale, and slate make up 50 to 75 percent of the coarse fragments.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Canton and Hinckley soils in similar landscape positions as the Quonset soils. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderately rapid or rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: extremely acid to strongly acid in the surface layer, extremely acid to moderately acid in the subsoil, and extremely acid to slightly acid in the substratum
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this map unit are woodland. A few areas are used for homesites.

Droughtiness, steep slopes, and highly erodible soils make this map unit poorly suited for farming or pasture.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, because of moisture stress caused by the limited available water capacity of the soil. Thinning crowded stands to standard stocking levels will allow growth that is more vigorous. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern; removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

Slope is a severe limitation for the development of building sites. Extensive land shaping is generally needed. Designing buildings and lots to conform to the natural slope of the land will help to overcome the slope limitation and reduce the hazard of erosion in disturbed areas. Large amounts of cut and fill are generally needed when constructing roads on this map unit. Constructing access roads and trails with grades of between 2 and 10 percent and installing water bars will help to prevent excessive soil erosion.

This soil has severe limitations for septic tank absorption fields. Steep slopes, seepage, and inadequate filtering capacity are the main limitations. The inadequate treatment capability may result in the pollution of ground water. Use of seepage pits or installing distribution lines across the slope will help to lessen the severity of the slope limitation, but additional precautionary measures may be necessary to reduce seepage of sewage effluent to the ground surface.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 6s

262E—Quonset sandy loam, 25 to 35 percent slopes

This very deep, steep, excessively drained soil is on glacial outwash plains, terraces, mounds, and long sinuous ridges in the Boston Basin and the northeastern part of the county. The areas of this soil are irregular in shape and range from 6 to 110 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, black sandy loam

Subsoil:
7 to 18 inches, dark yellowish brown channery loamy sand
18 to 28 inches, yellowish brown very channery loamy sand

Substratum:
28 to 65 inches, olive brown very channery sand

Many areas have a surface layer of loamy sand. Dark channers and flags of phyllite, schist, shale, and slate make up 50 to 75 percent of the coarse fragments.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Canton and Hinckley soils in similar landscape positions as the Quonset soils. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderately rapid or rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: very low
Soil reaction: extremely acid to strongly acid in the surface layer, extremely acid to moderately acid in the subsoil, and extremely acid to slightly acid in the substratum
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Most areas of this soil are woodland.

Droughtiness, steep slopes, and highly erodible soils make this map unit poorly suited for farming or pasture.

Potential productivity for eastern white pine is moderate. It is low for northern red oak, because of moisture stress caused by the soil’s limited available water capacity, and because of steepness of slope. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Seedling mortality is a management concern. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Minimizing soil disturbance to retain leaf cover and designing regeneration cuts to optimize shade and reduce evapotranspiration will help to retain the limited soil moisture.

Slope is a severe limitation for buildings, septic systems, and roads. Extensive land shaping is generally needed.

This map unit has severe limitations for septic tank absorption fields. Because of the steepness of the slope, it is impractical to install sewage disposal systems. In addition, seepage and the poor filtering capability of the soil mean that installed septic systems may pollute the ground water. Alternate sites should be selected in the planning process.

This map unit has poor potential for woodland wildlife habitat.

Capability subclass: 7s

300B—Montauk fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on the tops and upper side slopes of glaciated hills. The areas are oval or irregular in shape, and range from 6 to 170 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 20 inches, yellowish brown sandy loam
20 to 29 inches, light olive brown sandy loam

Substratum:
29 to 65 inches, firm light olive brown gravelly loamy sand

Included with this soil in mapping are small areas of Paxton and Canton soils in similar landscape positions as the Montauk soils, and Scituate soils in depressions. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites. A few areas are cropland, pasture, or orchards.

This map unit is well suited to cultivated crops, orchards, and pasture. Farming along the contour, stripcropping, and using cover crops and grasses and legumes in the cropping system help to reduce runoff and control erosion. Overgrazing is the main pasture management concern. Using rotation grazing and restricting grazing during wet periods will help to maintain the plant cover and prevent soil compaction. This map unit is mainly found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth.

Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. This soil is erodible, particularly on slopes longer than 150 feet and where plant cover has been removed or disturbed. Constructing access roads and trails along the contour and minimizing soil disturbance will reduce runoff and prevent excessive erosion.

Wetness is a severe limitation for the construction of dwellings with basements, and a moderate limitation for the construction of dwellings without basements. Constructing buildings with the lower or basement floor above the seasonal high water table, or installing footing drains around foundations will help to prevent interior damage caused by the seasonal high water table. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields. There may be a seasonal high water table from February to May. Also, restricted permeability in the substratum prevents the soils from readily absorbing sewage effluent. Installation of a larger-than-average leach field will help to overcome the latter limitation. Where suitable outlets are available, curtain drains around the leach field help to remove excess subsurface water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

300C—Montauk fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, well drained soil is on the side slopes of glaciated hills. The areas are oval or irregular in shape, and range from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 20 inches, yellowish brown sandy loam
20 to 29 inches, light olive brown sandy loam

Substratum:
29 to 65 inches, firm light olive brown gravelly loamy sand

Included with this soil in mapping are small areas of Paxton and Canton soils in similar landscape positions as the Montauk soils, and Scituate soils in depressions and on benches in the slopes. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland. Some areas are homesites.

This map unit is suited for cultivated crops. It is highly erodible, particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed.

Farming on the contour, stripcropping, diversions, and the use of cover crops, grasses and legumes in the cropping system help to reduce runoff and control erosion. This map unit is found on hills, where air drainage provides orchards some protection from frost. The soil is well suited to improved pasture. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, prevent soil compaction, and reduce erosion.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Constructing access roads along the contour, installing water bars, and minimizing soil disturbance will reduce runoff and prevent excessive erosion.

Slope and wetness severely limit this map unit's suitability as a site for the construction of dwellings with basements, and pose moderate limitations for the construction of dwellings without basements. Installing footing drains around the foundations of buildings with basements more than 2 feet below the surface will help avoid interior damage caused by seasonally high subsurface water. Designing lots to drain surface water away from buildings will provide added protection. Slope, wetness, and frost action are the main limitations for road construction. Locating roads along the contour where possible and planting suitable grasses on road banks will help to reduce the hazard of erosion. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields. The restricted permeability of the substratum prevents the map unit from readily absorbing sewage effluent. The installation of a larger-than-average leach field will help to overcome this limitation. Placing the distribution lines along the contour is generally needed to overcome the slope limitation. Where suitable outlets are available, curtain drains around the absorption field help to remove excess subsurface water in the spring. Planting well-adapted grasses on exposed areas and mulching during construction will reduce runoff and erosion on this highly erodible map unit.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

300D—Montauk fine sandy loam, 15 to 25 percent slopes

This very deep, moderately steep, well drained soil is on the side slopes and footslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 20 inches, yellowish brown sandy loam
20 to 29 inches, light olive brown sandy loam

Substratum:
29 to 65 inches, firm light olive brown gravelly loamy sand

Included with this soil in mapping are small areas of Paxton soils in similar landscape positions as the Montauk soils, and Charlton soils on irregular slopes and footslopes. Also included are areas where slopes exceed 25 percent. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland. A few areas are used as pasture or sites for orchards.

This map unit is suited to silage corn, but is not rated for sweet corn. It is highly erodible, particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed. The moderately steep slope restricts the use of farming equipment. This soil is suited to pasture grasses, but rotation grazing and restricting grazing during wet periods are necessary to maintain pasture seeding, reduce soil compaction, and prevent excessive erosion. The moderately steep slope limits reseeding and fertilizing operations. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Steepness of slope and soil erodibility are the main management concerns. Plant competition is moderate if conifers are grown. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and keeping soil disturbance to a minimum will help to reduce runoff and prevent excessive erosion. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will permit more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Moderately steep slopes and wetness severely limit building site development and road construction. Extensive land shaping is needed to prepare building sites. Designing buildings and lots to conform to the natural slope of the land will help to overcome the slope limitation. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help to protect the roads from damage resulting from the seasonal high water table and frost action.

This map unit has severe limitations for septic tank absorption fields because of wetness, steep slopes, and restricted permeability in the substratum. The installation of septic tank absorption fields can result in seepage of sewage effluent to the ground surface. Overcoming these limitations requires installation of expensive and elaborate sewage disposal systems. This can be avoided by carefully selecting sites on included or nearby soils that have gentler slopes and unrestricted permeability. Planting well-adapted grasses on exposed areas and mulching during construction help to minimize erosion.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 4e

302B—Montauk fine sandy loam, 3 to 8 percent slopes, extremely stony

This very deep, gently sloping, well drained soil is on the tops and upper side slopes of glaciated hills. The areas are oval or irregular in shape, and range from 6 to 210 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 20 inches, yellowish brown sandy loam
20 to 29 inches, light olive brown sandy loam

Substratum:
29 to 65 inches, firm light olive brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Paxton soils in similar landscape positions as the Montauk soils, and extremely stony Scituate soils in depressions. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites. A few areas are pastures.

Surface stones limit the use of this map unit for cultivated crops. This map unit is poorly suited for improved pasture because the surface stones hinder reseeding and fertilizing operations. The main management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover and prevent soil compaction. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

Wetness poses severe limitations for the construction of dwellings with basements, and moderate limitations for the construction of dwellings without basements. Installing footing drains at a depth of more than 2 feet around the foundations of buildings with basements will help to avoid interior damage caused by the seasonal high water table. Large stones and boulders may hinder excavation of foundations and roads. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

The shallow depth to the saturated zone is a severe limitation for septic tank absorption fields. Restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. The installation of a larger-than-average leach field will help to overcome this limitation. Where suitable outlets are available, curtain drains around the leach field help to remove excess subsurface water. Large stones in the soil may hinder the installation of distribution lines.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

302C—Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony

This very deep, strongly sloping, well drained soil is on the side slopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 160 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 20 inches, yellowish brown sandy loam
20 to 29 inches, light olive brown sandy loam

Substratum:
29 to 65 inches, firm light olive brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Paxton soils in similar landscape positions as the Montauk soils, and extremely stony Woodbridge soils along drainageways and on benches on the hillsides. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites. A few areas are pasture.

This map unit is poorly suited for cultivated crops because of surface stones, slope, and the hazard of erosion once the surface vegetation is removed. The soils are poorly suited for improved pasture because the surface stones hinder reseeding and fertilizing operations. The main management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, prevent soil compaction, and reduce erosion. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown.

Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment. This soil is erodible particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed. Constructing access roads and trails along the contour, installing water bars, and minimizing soil disturbance will reduce surface runoff and help to avoid excessive erosion.

Slope and a seasonally high water table are the main limitations for building site development and road construction. This map unit has severe limitations for the construction of buildings with basements. Land shaping is needed, and large stones hinder excavation operations. Buildings and lots designed to conform to the natural slope of the land will help to overcome the slope limitation and minimize erosion in disturbed areas. Designing roads along the contour will help to overcome the slope limitation, but extensive cutting and filling are generally required and the large stones and boulders may hinder excavation operations. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields because of a seasonally high water table and restricted permeability in the substratum. The restricted permeability prevents the soil from readily absorbing sewage effluent. The installation of a larger-than-average leach field with distribution lines placed along the contours will help to overcome these limitations. Large stones in the soil may hinder the installation of distribution lines. Planting well-adapted grasses on exposed areas and mulching during construction will reduce runoff and prevent excessive erosion on these erodible soils.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

302D—Montauk fine sandy loam, 15 to 25 percent slopes, extremely stony

This very deep, moderately steep, well drained soil is on the side slopes and footslopes of glaciated hills. The areas are long and narrow or irregular in shape and range from 6 to 140 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 20 inches, yellowish brown sandy loam
20 to 29 inches, light olive brown sandy loam

Substratum:
29 to 65 inches, firm light olive brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Paxton soils in similar landscape positions as the Montauk soils, and extremely stony Charlton soils on undulating footslopes. Also included are areas where slopes exceed 25 percent. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland.

This map unit is poorly suited for cultivated crops because of surface stones, slope, and the hazard of erosion once the surface vegetation is removed. This map unit is poorly suited to pasture because surface stones and moderately steep slopes hinder reseeding and fertilizing operations. The main pasture management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, prevent soil compaction, and reduce erosion. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Steepness of slope and the hazard of erosion are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Surface stones may hinder the operation of harvesting or planting equipment.

This map unit has severe limitations for building site development and road construction because of wetness and moderately steep slopes. Extensive land shaping is needed to develop sites, and stones may hinder excavation operations. Designing buildings and lots to conform to the natural slope of the land will help to overcome the slope limitation and minimize erosion. Designing roads along the contour helps to overcome the slope limitation, but extensive cutting and filling are generally required. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields. The main concerns are slope and depth to the saturated zone. Restricted permeability in the substratum is also a limitation. Because of the steep slope and restricted permeability, effluent from septic tank absorption fields can seep to the ground surface. Overcoming these limitations requires the installation of expensive and elaborate sewage disposal systems. This can be avoided by carefully selecting sites on soils with gentler slopes and unrestricted permeability. Planting exposed areas with well-adapted grasses, and mulching during construction helps to minimize erosion.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

305B—Paxton fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on the smooth, convex side slopes and tops of glaciated hills. The areas are oval or irregular in shape and range from 6 to 190 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of Montauk and Charlton soils in similar landscape positions as the Paxton soils, and Woodbridge and Ridgebury soils in depressions and along drainageways. Areas where up to 3 percent of the land surface is covered by stones are also included. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Some areas of this map unit are woodland, and some are homesites. A few areas are cropland, pasture, or orchards.

This map unit is well suited to cultivated crops, orchards, and pasture (fig. 16). Susceptibility to erosion is a management concern. Farming on the contour, stripcropping, and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and control erosion. Overgrazing is the main pasture management concern. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover and prevent soil compaction of the soil. This map unit is found on hillsides, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has moderate limitations as a site for dwelling construction. Wetness is the main limitation. Constructing buildings with basement floors above the seasonal high water table or installing footing drains will help to avoid interior damage caused by high ground water. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields, due to the shallow depth to the saturated zone. Restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. The installation of a larger-than-average leach field will help to overcome the latter limitation. Where suitable

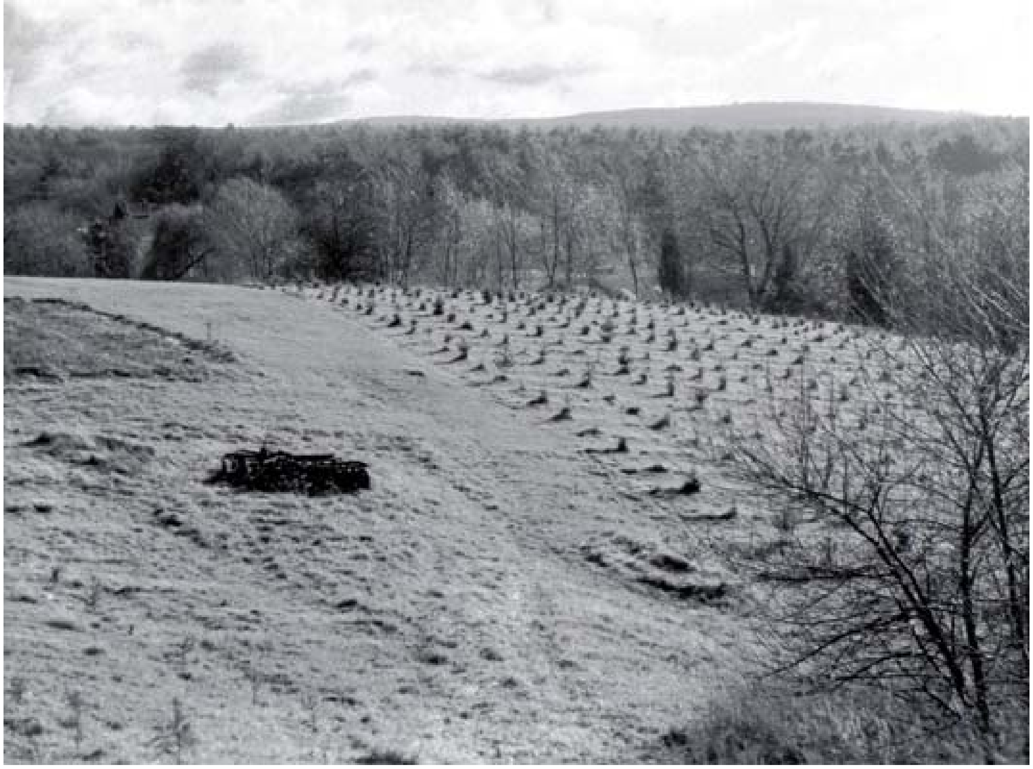

Figure 16.—An area of Paxton fine sandy loam, 3 to 8 percent slopes, is used for growing plant nursery stock.

outlets are available, curtain drains around the leach field help to remove excess subsurface water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

305C—Paxton fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, well drained soil is on the smooth, convex side slopes and footslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 150 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of Montauk and Charlton soils in similar landscape positions as the Paxton soils, and Woodbridge soils on toeslopes, in drainageways, and on benches on the slopes. Also included are areas where up to 3 percent of the land surface is covered by stones. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites. A few areas are cropland, pasture, or orchards.

This map unit is well suited for silage corn. Susceptibility to erosion, especially on slopes longer than 150 feet, is a management concern. It is not rated for sweet corn. Farming along the contours, stripcropping, diversions, and using cover crops and grasses and legumes in the cropping system help to reduce runoff and control erosion. This soil is found on hills, where air drainage provides orchards with some protection from frost. This map unit is well suited for improved pasture. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover and prevent soil compaction.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow for growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Constructing access roads and trails along the contour and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion.

Slope and seepage in winter and spring pose moderate limitations for the construction of dwellings with or without basements. Footing drains around foundations will help to remove excess subsurface water. Designing lots to drain surface water away from buildings will provide added protection. Slope, excess water, and frost action pose moderate limitations for road construction. Constructing roads on the contour where possible and planting well-adapted grasses on road banks will help to reduce erosion. Use of well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect roads from damage caused by soil wetness and frost action.

Slow percolation rates are severe limitations for septic tank absorption fields. Restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. Installing a larger-than-average leach field will help to overcome this limitation. Installing the distribution lines along the contour is generally needed to overcome the slope limitation. Where suitable outlets are available, curtain drains around the leach field help to remove excess subsurface water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

305D—Paxton fine sandy loam, 15 to 25 percent slopes

This very deep, moderately steep, well drained soil is on smooth, convex side slopes of glaciated hills. The areas are long and narrow, ranging from 6 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of Montauk soils in similar landscape positions as the Paxton soils, and Charlton soils on footslopes. Also included are areas where up to 3 percent of the land surface is covered by stones. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites. A few areas are pastures or orchards.

This map unit is suited to silage corn, but not rated for sweet corn. It is highly erodible, particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed. The moderately steep slope restricts the use of equipment. This map unit is well suited to pasture grasses. Using rotation grazing and restricting grazing during wet periods are necessary to maintain pasture seeding and prevent soil compaction. Because of slope, reseeding and fertilizing operations are difficult. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Steepness of slope and high erodibility are the main management concerns. Plant competition is moderate if conifers are grown. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and keeping soil disturbance to a minimum will help to reduce runoff and prevent excessive erosion. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

The moderately steep slope severely limits this map unit for building site development. Extensive cuts and fills are needed for dwellings, small commercial buildings, and roads. Buildings and lots designed to conform to the natural slope of the land will help to overcome this limitation. Designing roads along the contour helps to overcome the severe slope limitation.

This map unit is severely limited as a site for septic tank absorption fields. Because of the steep slope and restricted permeability in the substratum, the installation of septic tank absorption fields can result in seepage of sewage effluent to the ground surface. Overcoming the limitations generally requires installation of expensive and elaborate sewage disposal systems. This can be avoided by carefully selecting sites on soils with gentler slopes and unrestricted permeability. This soil is highly erodible when disturbed and when the vegetative cover is removed. Planting well-adapted grasses on exposed areas and mulching during construction helps to minimize erosion.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 4e

305E—Paxton fine sandy loam, 25 to 35 percent slopes

This very deep, steep, well drained soil is on the smooth, convex side slopes of glaciated hills. The areas are long and narrow and range from 6 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of Montauk soils in similar landscape positions as the Paxton soils, and Charlton soils on footslopes. Also included are areas where up to 3 percent of the land surface is covered by stones. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland. A few areas are pasture.

This map unit is poorly suited to cultivated crops. It is highly erodible, particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed. The steep slope restricts the use of equipment, prevents cultivation, and makes reseeding and fertilizing operations very difficult. This map unit is not rated for grasses and hay. Using rotation grazing and restricting grazing during wet periods are necessary to maintain pasture seeding and prevent overgrazing.

Potential productivity for both eastern white pine and northern red oak is moderate. Steepness of slope and high erodibility are the main management concerns. Keeping soil disturbance to a minimum will help to reduce runoff and minimize erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Slope is a severe limitation for building sites and road construction. Due to steep slope and restricted permeability in the substratum, these soils have severe limitations for septic tank absorption fields. By selecting sites on better suited soils, these limitations can be avoided.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6e

307B—Paxton fine sandy loam, 3 to 8 percent slopes, extremely stony

This very deep, gently sloping, well drained soil is on the smooth, convex side slopes and tops of glaciated hills. The areas are oval or irregular in shape and range from 6 to 140 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of extremely stony Montauk and Charlton soils in similar landscape positions as the Paxton soils. Inclusions of very stony Woodbridge and extremely stony Ridgebury soils are in depressions and along drainageways. Also included are areas with less than 3 percent surface stones. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: low
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites. A few areas are pastures or orchards.

Unless removed, stones limit the use of this map unit for cultivated crops. The stones hinder seeding and fertilizing operations. This map unit is poorly suited to pasture. The main management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover and prevent soil compaction. This map unit lies on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

This map unit has moderate limitations for dwelling construction sites. Constructing buildings with the basement floor above the seasonal high water table, or installing footing drains, will help to avoid interior damage caused by the seasonal high water table. Large stones and boulders may hinder excavation of foundations and roads. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations as a site for septic tank absorption fields, as restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. Installing a larger-than-average leach field will help to overcome this limitation. Where suitable outlets are available, curtain drains around the leach field help to remove excess subsurface water. The large stones in the soil may hinder the installation of distribution lines.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

307C—Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony

This very deep, strongly sloping, well drained soil is on the smooth, convex side slopes and footslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 100 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of extremely stony Montauk and Charlton soils in similar landscape positions as the Paxton soils. Inclusions of extremely stony Woodbridge soils are on toeslopes, in shallow drainageways, and on benches on the slopes. Also included are areas where stones cover less than 3 percent of the surface. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: low
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites. A few areas are pasture.

This map unit has limited usefulness for cultivated crops because surface stones and slope hinder seeding and fertilizing operations. The soils are poorly suited for improved pasture. The main management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, prevent compaction of the soil, and reduce erosion. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment. Constructing access roads and trails along the contour and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion.

Slope and wetness are moderate limitations for dwelling site development and road construction. Land shaping is needed, and stones hinder excavation operations. Designing buildings and lots to conform to the natural shape of the land will help to overcome the slope limitation and minimize erosion in disturbed areas. Laying out roads along the contour will help to overcome the slope limitation, but extensive cutting and filling are generally required. Large stones and boulders may hinder excavation operations. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help to prevent damage from soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields. Restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. Installing a larger-than-average leach field with distribution lines placed along the contour will help to overcome the limitation. Large stones in the soil may hinder the installation of distribution lines. Planting exposed areas with well-adapted grasses and using mulch will reduce runoff and prevent excessive erosion.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

307D—Paxton fine sandy loam, 15 to 25 percent slopes, extremely stony

This very deep, moderately steep, well drained soil is on the smooth, convex side slopes of glaciated hills. The areas are long and narrow and range from 6 to 110 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of extremely stony Montauk soils in similar landscape positions as the Paxton soils, and extremely stony Charlton soils on footslopes. Also included are areas where stones cover less than 3 percent of the surface. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: low
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland.

Surface stones limit the use of this map unit for cultivated crops. Erosion is a management concern, particularly on slopes longer than 150 feet. This map unit is poorly suited to pasture because surface stones hinder reseeding and fertilizing operations. The main pasture management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, prevent soil compaction, and reduce erosion. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Slope and high erodibility are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

Slope severely limits dwelling site development and road construction. Extensive land shaping is needed to develop sites, and excavation operations may be hindered by large stones and boulders. Designing buildings and lots to conform to the natural slope of the land will help to overcome the slope limitation. Laying out roads along the contours helps to overcome the slope limitation, but extensive cutting and filling are generally required.

This map unit has severe limitations for septic tank absorption fields. Effluent from absorption fields can seep to the ground surface due to moderately steep slopes and restricted permeability in the substratum. Overcoming these limitations generally requires installation of expensive and elaborate sewage disposal systems. This expense may be avoided by selecting sites on soils that are better suited for sewage systems. This map unit is highly erodible when disturbed and plant cover is removed. Planting exposed areas with well-adapted grasses and mulching, particularly during construction, helps to minimize the hazard of erosion.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

307E—Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony

This very deep, steep, well drained soil is on the smooth, convex side slopes of glaciated hills. The areas are long and narrow and range from 6 to 90 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

Included with this soil in mapping are small areas of extremely stony Montauk soils in similar landscape positions as the Paxton soils, and extremely stony Charlton soils on footslopes. Also included are areas where stones cover less than 3 percent of the surface. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: low
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland.

This map unit is poorly suited to cultivated crops. Susceptibility to erosion is a management concern, particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed. Surface stones and steep slopes restrict or prohibit the operation of equipment. Difficulty in using machinery prevents these soils from being easily used for hay or improved pasture, but the soil is suitable for native pasture. The main pasture management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover and prevent soil compaction.

Potential productivity for both eastern white pine and northern red oak is moderate. Steepness of slope and high erodibility are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

Because of steep slopes and restricted permeability in the substratum, this map unit has severe limitations for building sites, road construction, and as a site for septic tank absorption fields. The performance of septic tank absorption fields is further hindered by the fact that the soils readily absorb but are poor filters of sewage effluent, which may pollute ground water.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

310A—Woodbridge fine sandy loam, 0 to 3 percent slopes

This very deep, nearly level, moderately well drained soil is on the smooth tops and toeslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 200 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:
4 to 18 inches, yellowish brown fine sandy loam
18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and prominent yellowish red masses of iron accumulation, and distinct light brownish gray redoximorphic depletions

Substratum:
30 to 65 inches, firm light olive brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation, and distinct light brownish gray redoximorphic depletions

Included with this soil in mapping are small areas of Paxton soils on slight rises in the landscape, Ridgebury soils in depressions and drainageways, and Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland, though some areas have been developed for homesites. A few areas are cropland or pasture.

This map unit is well suited to cultivated crops or pasture. The perched high water table may delay planting in spring or harvesting in fall. Drainage is necessary for optimum crop growth and the most efficient use of machinery. The firm substratum increases the difficulty of installing drainage systems. Pasture grasses that can tolerate seasonal wetness are best suited to this soil. Using rotation grazing and restricting grazing during wet periods help to prevent soil compaction and maintain desirable plant densities.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly-established seedlings.

This map unit has severe limitations for the construction of dwellings with basements, and moderate limitations for the construction of dwellings without basements. Constructing buildings without basements or above the seasonal high water table and landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basements extend to more than 2 feet below the surface, placing footing drains around foundations will help to remove excess subsurface water. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Because of the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2w

310B—Woodbridge fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is on the smooth tops and upper side slopes and toeslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 300 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:
4 to 18 inches, yellowish brown fine sandy loam
18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Substratum:
30 to 65 inches, firm light olive brown fine sandy loam with prominent strong brown and yellowish red areas of masses of iron accumulation and distinct light brownish gray areas of redoximorphic depletion

Included with this soil in mapping are small areas of Paxton soils on slight rises in the landscape, Ridgebury soils in depressions and drainageways, and Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches

Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland, though some areas have been developed for homesites. A few areas are cropland or pasture.

This map unit is well suited to cultivated crops or pasture. The perched high water table may delay planting in spring or harvesting in fall. Drainage is necessary for optimum crop growth and the most efficient use of machinery, though the firm substratum increases the difficulty of installing drainage systems. Pasture grasses that can tolerate seasonal wetness are best suited to this map unit. The prevention of overgrazing, to maintain plant hardiness and density and reduce erosion, is the main pasture management objective. Using rotation grazing and restricting use during wet periods help to prevent soil compaction and to maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has severe limitations for the construction of dwellings with basements, and moderate limitations for the construction of dwellings without basements. Constructing buildings without basements or above the seasonal high water table, and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors extend more than 2 feet below the surface, footing drains around foundations will help to remove excess subsurface water. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Because of the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

310C—Woodbridge fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, moderately well drained soil is on the smooth side slopes and footslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:
4 to 18 inches, yellowish brown fine sandy loam

18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and yellowish red areas of masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Substratum:
30 to 65 inches, firm, light olive brown fine sandy loam with prominent strong brown and yellowish red areas of masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Included with this soil in mapping are small areas of Paxton soils on slight rises in the landscape, Ridgebury soils in drainageways, and Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland. Some areas have been developed for homesites. A few areas are cropland, pasture, or orchards.

This map unit is well suited for silage corn, grass hay, or grass-legume hay, but not rated for sweet corn. The soil is highly erodible on slopes longer than 150 feet in length. Farming on the contour, stripcropping, conservation tillage, diversions, and the use of cover crops, grasses, and legumes in the cropping system help to reduce runoff and control erosion. The perched high water table may delay planting in spring or harvesting in fall. Drainage is necessary for optimum crop growth and the most efficient use of machinery. The firm substratum increases the difficulty of installing drainage systems. Pasture grasses that can tolerate seasonal wetness are well suited to this map unit. The prevention of overgrazing to maintain plant hardiness and density and reduce erosion is the main management objective. Rotation grazing and restricted use during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands especially of diseased, poorly formed, or otherwise undesirable trees to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Constructing access roads and trails along the contour, installing water bars, and minimizing soil disturbance will help reduce runoff and prevent excessive erosion.

Slope and soil wetness pose moderate limitations for the construction of dwellings without basements. Constructing buildings without basements or above the seasonal high water table and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by excess soil wetness. Wetness is a severe limitation for dwellings with basements. Where basement floors extend more than 2 feet below the surface, footing drains around foundations will help to remove excess subsurface water. Designing buildings and lots to conform to the natural shape of the land will help to overcome the slope limitation. Planting grasses on exposed areas and mulching, particularly during construction, will help to reduce runoff and minimize erosion. Frost action is the main limitation for road construction. Designing roads along the contour will help reduce excessive erosion. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Because of the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installation of a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

311B—Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony

This very deep, gently sloping, moderately well drained soil is on the smooth crests, upper side slopes, and toeslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 200 acres in size. Stones cover 0.1 to 3 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:
4 to 18 inches, yellowish brown fine sandy loam
18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Substratum:
30 to 65 inches, firm, light olive brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Included with this soil in mapping are small areas of extremely stony Paxton soils on slight rises in the landscape, extremely stony Ridgebury soils in depressions and drainageways, and extremely stony Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, and slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland. A few areas have been developed for homesites or are pastures or orchards.

This map unit is not rated for cultivated crops and improved pasture. Surface stones hinder or prohibit the use of conventional farm equipment, and may need to be removed. Using rotation grazing and restricting grazing during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

This map unit has severe limitations for the construction of dwellings with basements, due to wetness. Constructing buildings without basements or above the seasonal high water table and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors extend more than 2 feet below the surface, placing footing drains around foundations will help to remove excess subsurface water. Large stones on the surface may hinder excavation operations. Susceptibility to frost action is a severe limitation for roadways. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by frost action.

The seasonal high water table and restricted permeability in the substratum pose severe limitations for septic tank absorption fields. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations. Large stones may hinder the installation of distribution lines.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

311C—Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony

This very deep, strongly sloping, moderately well drained soil is on the smooth side slopes and toeslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 60 acres in size. Stones cover 0.1 to 3 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:
4 to 18 inches, yellowish brown fine sandy loam
18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Substratum:
30 to 65 inches, firm, light olive brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Included with this soil in mapping are small areas of extremely stony Paxton soils on slight rises in the landscape, extremely stony Ridgebury soils in drainageways, and extremely stony Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland. A few areas have been developed for homesites.

This map unit is not rated for cultivated crops or pasture unless the surface stones are removed. Susceptibility to erosion on slopes longer than 150 feet is a management concern. The stones hinder or prohibit the use of conventional farm equipment. Reducing erosion is the main pasture management objective; plant hardiness and density can be maintained by preventing overgrazing. Using rotation grazing and restricting use during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment. Constructing access roads and trails along the contour, installing water bars, and minimizing soil disturbance will help reduce runoff and prevent excessive erosion.

This map unit has severe limitations as a site for the construction of dwellings with basements. Slope and soil wetness are the main limitations for building site development. Planting well-adapted grasses on exposed areas and mulching will help to reduce runoff and minimize erosion. Constructing buildings without basements or above the seasonal high water table and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by excess soil wetness. Where basement floors extend more than 2 feet below the surface, placing footing drains around foundations will help to remove excess subsurface water. Designing buildings and lots to conform to the natural shape of the land will help to overcome the limitation posed by slope. Large stones on the surface may hinder excavation operations. Frost action is a severe limitation for road construction. Designing roads along the contour will help to reduce runoff and erosion. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Because of the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations. Large stones may hinder the installation of distribution lines. This map unit is erodible when the soils are disturbed or when the plant cover is removed.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

312B—Woodbridge fine sandy loam, 3 to 8 percent slopes, extremely stony

This very deep, gently sloping, moderately well drained soil is on the smooth crests, upper side slopes, and toeslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 240 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:
4 to 18 inches, yellowish brown fine sandy loam
18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation, and distinct light brownish gray redoximorphic depletions

Substratum:
30 to 65 inches, firm light olive brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Included with this soil in mapping are small areas of extremely stony Paxton soils on slight rises in the landscape, extremely stony Ridgebury soils in depressions and drainageways, and extremely stony Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland. A few areas have been developed for homesites.

This map unit is not rated for cultivated crops or pasture. Surface stones prohibit the use of conventional farm equipment, and may need to be removed. Using rotation grazing and restricting grazing during wet periods help to prevent soil compaction and maintain desirable plant densities.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. The large stones may hinder the operation of planting and harvesting equipment.

Wetness is a severe limitation for the construction of dwellings with basements. Constructing buildings without basements or above the seasonal high water table and contouring the land surface to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors lie more than 2 feet below the surface, placing footing drains around foundations will help to remove excess subsurface water. Large stones on the surface may hinder excavation operations. Frost action is a severe limitation for the construction of roadways. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Because of the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installation of a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations. Large stones may hinder the installation of distribution lines.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

312C—Woodbridge fine sandy loam, 8 to 15 percent slopes, extremely stony

This very deep, strongly sloping, moderately well drained soil is on the smooth side slopes and toeslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 30 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:

0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:

4 to 18 inches, yellowish brown fine sandy loam
18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Substratum:

30 to 65 inches, firm light olive brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Included with this soil in mapping are small areas of extremely stony Paxton soils on slight rises in the landscape, extremely stony Ridgebury soils in depressions and drainageways, and extremely stony Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland. A few areas have been developed for homesites or are pastures or orchards.

This map unit is not rated for cultivated crops or pasture. Stones hinder or prohibit the use of conventional farm equipment, and may need to be removed. Using rotation grazing and restricting grazing during wet periods help to prevent soil compaction, maintain desirable plant densities, and reduce erosion.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment. Constructing access roads and trails along the contours, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion.

Slope and soil wetness are severe limitations for the construction of dwellings with basements, but only moderate limitations for the construction of dwellings without basements. Planting well-adapted grasses on exposed areas and mulching, particularly during construction, will help to reduce runoff and minimize erosion. Constructing buildings without basements or above the seasonal high water table and landscaping designed to drain surface water away from buildings will help to avoid interior damage caused by excess soil wetness. Where basement floors lie more than 2 feet below the surface, placing footing drains around foundations will help to remove excess subsurface water. Designing buildings and lots to conform to the natural shape of the land will help to overcome the slope limitation. Large stones on the surface may hinder excavation operations.

Frost action is a severely limiting factor for road construction. Designing roads along the contours will reduce the risk of erosion. Constructing roadways on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action. Large stones may hinder road construction.

Because of the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations, though large stones may hinder the installation of distribution lines.

This map unit has fair potential for woodland wildlife.

Capability subclass: 7s

315B—Scituate fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is on shoulders and toeslopes of uplands. The areas are irregular in shape and range from 6 to 270 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 13 inches, light olive brown sandy loam
13 to 20 inches, light yellowish brown sandy loam

Substratum:
20 to 27 inches, pale olive loamy fine sand with prominent yellowish brown masses of iron accumulation
27 to 65 inches, very firm olive gray gravelly loamy sand with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of Montauk soils on slight rises in the landscape, Ridgebury soils in depressions and along drainageways, and Woodbridge soils in similar landscape positions as the Scituate soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: low
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland. Some areas are used for forage production or homesites.

This map unit is well suited for silage corn, but is not rated for sweet corn. Runoff and erosion are management concerns which can be reduced by farming on the contour, stripcropping, and using cover crops, grasses, and legumes in the cropping system. The perched high water table may delay planting in spring or harvesting in fall. Drainage is necessary for optimum crop growth and the most efficient use of machinery. The firm substratum increases the difficulty of installing drainage systems. Pasture grasses that tolerate seasonal wetness are best suited to this soil. The prevention of overgrazing maintains plant hardiness and density and reduces erosion. Using rotation grazing and restricting use during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Wetness severely limits the construction of dwellings with basements. Constructing buildings without basements or above the seasonal high water table and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors lie more than 2 feet below the surface, foundation drains will help to remove excess subsurface water. Wetness and susceptibility to frost action are severely limiting factors for local roadways. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost damage.

Because of the seasonal high water table and restricted permeability, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2w

315C—Scituate fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, moderately well drained soil is on side slopes, toeslopes, and broad drainage swales of uplands. The areas are irregular in shape and range from 6 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 13 inches, light olive brown sandy loam
13 to 20 inches, light yellowish brown sandy loam

Substratum:
20 to 27 inches, pale olive loamy fine sand with prominent yellowish brown masses of iron accumulation
27 to 65 inches, very firm olive gray gravelly loamy sand with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of Montauk soils on slight rises in the landscape, Ridgebury soils in drainageways, and Woodbridge soils in similar landscape positions as the Scituate soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: low
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland. Some areas are used for forage production, and a few areas are homesites.

This map unit is well suited for silage corn, but is not rated for sweet corn. Susceptibility to erosion is a management concern, particularly on slopes longer than 150 feet. Farming on the contour, diversions, stripcropping, and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and control erosion. The perched high water table may delay planting in spring or harvesting in fall. Drainage is necessary for optimum crop growth and the most efficient use of machinery. The firm substratum increases the difficulty of installing drainage systems. Pasture grasses that can tolerate seasonal wetness are best suited to this soil. The prevention of overgrazing helps to maintain plant hardiness and density and reduce erosion. Using rotation grazing and restricting use during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Constructing access roads and trails along the natural contour of the land and minimizing soil disturbance will help to reduce runoff and prevent excessive soil erosion.

This map unit has severe limitations for dwellings with basements. Slope and soil wetness are the main limitations for building site development. Constructing buildings without basements or above the seasonal high water table, and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors are more than 2 feet below the surface, foundation drains will help to remove excess subsurface water. Designing buildings and lots to conform to the natural shape of the land will help to overcome the slope limitation, reduce the need for extensive land shaping, and minimize erosion on exposed areas. Slope, a seasonal high water table, and frost action are moderate limitations for the construction of local streets and roads. In addition to overcoming the slope limitation, designing roads so that they run along the contours will reduce runoff and erosion. Constructing roads on well-compacted, coarse-textured base material, and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Because of the seasonal high water table and restricted permeability, this map unit has severely limited potential for septic tank absorption fields. The installation of a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

317B—Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony

This very deep, gently sloping, moderately well drained soil is on hill crests, on toeslopes, and in depressions of uplands. The areas of this soil are irregular in shape and range from 6 to 310 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 13 inches, light olive brown sandy loam
13 to 20 inches, light yellowish brown sandy loam

Substratum:
20 to 27 inches, pale olive loamy fine sand with prominent yellowish brown masses of iron accumulation
27 to 65 inches, very firm olive gray gravelly loamy sand with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of extremely stony Montauk soils on slight rises in the landscape, extremely stony Ridgebury soils in depressions and along drainageways, and extremely stony Woodbridge soils in similar landscape positions as the Scituate soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: low
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites.

This map unit is not rated for cultivated crops or pasture. Surface stones hinder or prohibit the operation of conventional farm equipment. The prevention of overgrazing helps to maintain plant hardiness and density and reduce erosion. Using rotation grazing and restricting use during wet periods help to prevent compaction, maintain desirable plant densities, and minimize erosion. This soil is on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. The presence of large stones on the surface may hinder the operation of planting and harvesting equipment.

This map unit has severe limitations for the construction of dwellings with basements, due to large stones and wetness. Constructing buildings without basements or above the seasonal high water table, and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors are more than 2 feet below the surface, foundation drains will help to remove excess subsurface water. Large stones on the surface may hinder excavation operations. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action. The presence of large stones may hinder road construction.

Because of the seasonal high water table and restricted permeability, this map unit has severe limitations for septic tank absorption fields. In addition, large stones may hinder the installation of distribution lines. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

317C—Scituate fine sandy loam, 8 to 15 percent slopes, extremely stony

This very deep, strongly sloping, moderately well drained soil is on the side slopes and toeslopes of uplands. The areas of this soil are irregular in shape and range from 6 to 60 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 13 inches, light olive brown sandy loam
13 to 20 inches, light yellowish brown sandy loam

Substratum:
20 to 27 inches, pale olive loamy fine sand with prominent yellowish brown masses of iron accumulation
27 to 65 inches, very firm olive gray gravelly loamy sand with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of extremely stony Montauk soils on slight rises in the landscape, extremely stony Ridgebury soils in drainageways, and extremely stony Woodbridge soils in similar landscape positions as the Scituate soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: low
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, November-May; perched
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites.

This map unit is not rated for cultivated crops and is poorly suited to pasture. Surface stones hinder or prohibit the operation of conventional farm equipment. The prevention of overgrazing helps to maintain plant hardiness and density and reduce erosion. Using rotation grazing and restricting use during wet periods help to prevent compaction, maintain desirable plant densities, and minimize erosion. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. The presence of large stones on the surface may hinder the operation of planting and harvesting equipment. These soils are erodible, particularly on slopes longer than 150 feet. Constructing access roads and trails along the natural contour of the land and minimizing soil disturbance will help to reduce runoff and excessive erosion. The large stones on the surface may hinder the operation of planting and harvesting equipment.

This map unit has severe limitations for the construction of dwellings with basements. Slope, large stones, and soil wetness are the main limitations for building site development. Planting well-adapted grasses on exposed areas and mulching, particularly during construction, will help to reduce runoff and minimize erosion. Constructing buildings without basements or above the seasonal high water table and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors lie more than 2 feet below the surface, foundation drains will help to remove excess subsurface water. Designing buildings and lots to conform to the natural shape of the land will help to overcome the slope limitations. Some land shaping may be necessary, and the large stones can hinder excavation operations. Slope, the seasonal high water table, and frost action are moderate limitations for the construction of local roads and streets. In addition to overcoming the slope limitation, constructing roads along the contour will reduce runoff and erosion. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roadway from damage caused by soil wetness and frost action. Building may be hindered by large stones.

A seasonal high water table and restricted permeability are severe limitations for the proper functioning of septic tank absorption fields. Installing a larger-than-average distribution system in a mound of more suitable fill material will help to overcome these limitations.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

320B—Birchwood fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is on the lower side slopes and toeslopes of drumlins that are adjacent to glacial stream terraces and outwash plains. The areas of this soil are long and narrow or irregular in shape and range from 6 to 70 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, very dark grayish brown fine sandy loam

Subsoil:
5 to 25 inches, yellowish brown loamy fine sand
25 to 38 inches, light yellowish brown loamy sand with distinct light brownish gray redoximorphic depletions

Substratum:
38 to 65 inches, very firm grayish brown gravelly fine sandy loam with prominent strong brown masses of iron accumulation

Included with this soil in mapping are small areas of Merrimac and Sudbury soils that have a sandy, loose or friable substratum. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderately rapid or rapid in the surface layer, rapid in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to slightly acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, November-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland. Some areas are used for residential development, and a few areas are cropland or orchards.

This map unit is suited to silage corn, and not rated for sweet corn. It is well suited for hay and improved pasture. Wetness is the main limitation. The soil dries out and warms up slowly in the spring, necessitating artificial drainage, but irrigation is needed in dry seasons. The use of cover crops and crop residue helps to maintain the organic matter content and increase water holding capacity.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Pruning will improve the quality of white pine.

This map unit has severe limitations for the construction of dwellings with basements. Constructing buildings with basement floors above the seasonal high water table and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the high water table. Installing footing drains around foundations will help to remove excess subsurface water. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Because of the seasonal high water table and restricted permeability of the substratum, this map unit has severe limitations for septic tank absorption fields. Placing distribution lines in a mound of more suitable fill material will help to overcome these limitations.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 2e

325D—Newport channery fine sandy loam, 8 to 25 percent slopes

This very deep, rolling to hilly, well-drained soil is on the smooth, convex side slopes of uplands in the Boston Basin. The areas are oval or irregular in shape and range from 6 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown channery fine sandy loam

Subsoil:
8 to 18 inches, olive brown channery silt loam
18 to 24 inches, olive brown channery sandy loam

Substratum:
24 to 65 inches, firm olive gray channery fine sandy loam

Included with this soil in mapping are small areas of Paxton soils in similar landscape positions as the Newport soils, Pittstown soils in drainageways, and loamy Udorthents where the Newport soils have been cut away or covered with more than 20 inches of loamy fill. Also included are a few small areas of Urban land where the soil is covered by structures or impervious surfaces such as pavement or buildings, and areas where slopes are less than 8 percent. Minor soils and Urban land comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer, moderate or moderately rapid in the upper part of the subsoil, and slow or very slow in the lower part, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are used for homesites, though some areas are left as woodland. A few areas are used for parks and public buildings.

This map unit is well suited to cultivated crops, orchards, and pasture, but is highly erodible. Farming on the contour, stripcropping, and using cover crops and grasses and legumes in the cropping system all help to reduce runoff and control erosion.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands to stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Slope constitutes a severe limitation for the construction of dwellings with or without basements. Land shaping may be necessary in some areas. Slope is a severe limitation for road construction. Locating roads along the contour and planting grasses and legumes will help to reduce road bank erosion. Constructing roadways on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields because of slope and restricted permeability. The restricted permeability prevents the soil from readily absorbing septic tank effluent. Installing a larger-than-average distribution system will help to overcome this limitation. Where outlets are available, placing curtain drains around the leach field will help remove excess subsurface water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 4e

330B—Bernardston very fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on the smooth, slightly convex crests and upper side slopes of glaciated hills in the north-central part of the county. The areas are oval or irregular in shape and range from 6 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown very fine sandy loam

Subsoil:
3 to 14 inches, dark yellowish brown channery silt loam
14 to 21 inches, yellowish brown channery silt loam

Substratum:
21 to 26 inches, firm light olive brown channery silt loam
26 to 65 inches, very firm olive brown channery silt loam

Included with this soil in mapping are small areas of Paxton soils in similar landscape positions as the Bernardston soils, Pittstown soils in depressions, and Charlton soils on footslopes and toeslopes. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2.0 feet, February-April; perched for brief periods
Hydrologic group: C

Some areas of this map unit are woodland or homesites. A few areas are cropland, pasture, or orchards.

This map unit is not rated for sweet corn. It is well suited to silage corn, pasture, and orchards. Farming on the contour, stripcropping, and using cover crops and grasses and legumes in the cropping system help to reduce runoff and control erosion. The prevention of overgrazing helps to maintain plant hardiness and density and reduce erosion. Using rotation grazing and restricting grazing during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow for more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Wetness is a moderate limitation for the construction of dwellings. Constructing buildings with the lower or basement floor above the seasonal high water table or installing footing drains around foundations will help to avoid interior damage caused by the high water table. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields, as restricted permeability prevents the soil from readily absorbing sewage effluent. The installation of a larger-than-average leach field will help to overcome this limitation. Where suitable outlets are available, placing curtain drains around the leach field helps to remove excess subsurface water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

330C—Bernardston very fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, well drained soil is on the smooth, convex side slopes of glaciated hills in the north-central part of the county (fig. 17). The areas are oval or irregular in shape and range from 6 to 70 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown very fine sandy loam

Subsoil:
3 to 14 inches, dark yellowish brown channery silt loam
14 to 21 inches, yellowish brown channery silt loam

Substratum:
21 to 26 inches, firm light olive brown channery silt loam
26 to 65 inches, very firm olive brown channery silt loam

Included with this soil in mapping are small areas of Paxton soils in similar landscape positions as the Bernardston soils, Pittstown soils along drainageways and on benches on the hillsides, and Charlton soils on footslopes. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches

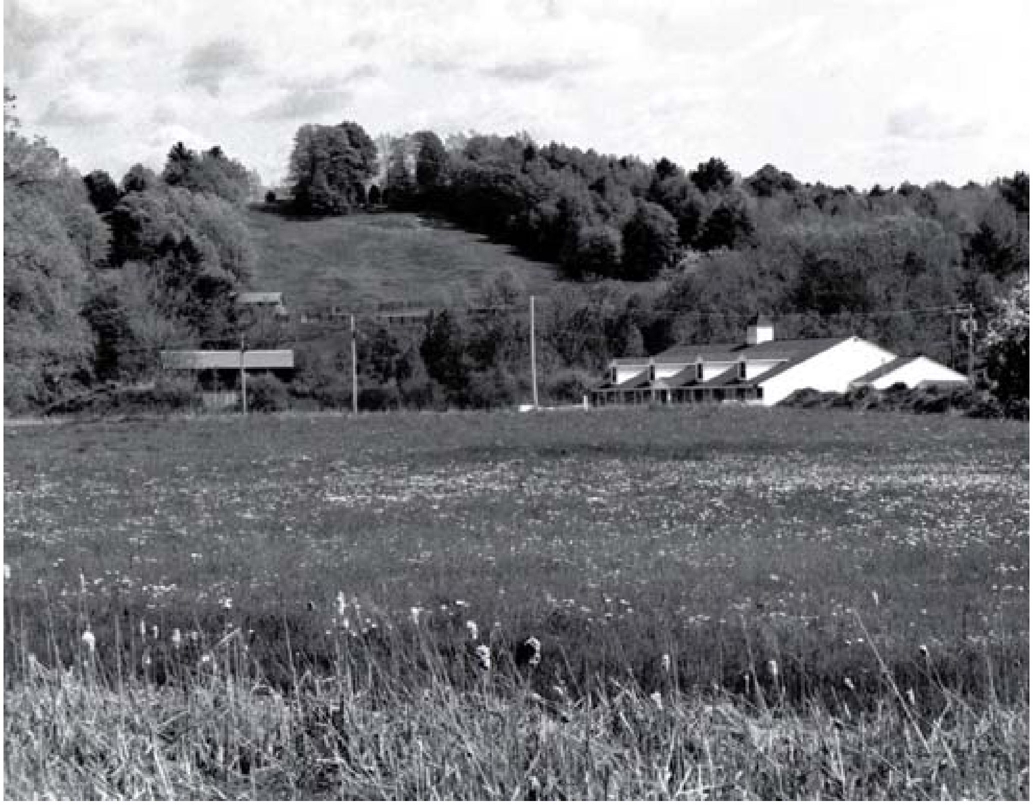

Figure 17.—In the foreground are Birdsall soils, which occur in depressions and low areas. Bernardston soils are on the smoothly sloping hill in the background.

Depth to seasonal high water table: 1.5 to 2.0 feet, February-April; perched for brief periods
Hydrologic group: C

Some areas of this map unit are woodland or homesites. A few areas are cropland, pasture, or orchards.

This map unit is suited to silage corn and orchards, but not rated for sweet corn. It is well suited to grass-clover and legume hay. High erodibility is the main management concern, particularly on slopes longer than 150 feet. Farming on the contour, stripcropping, diversions, and the use of cover crops and grasses and legumes in the cropping system help to reduce runoff and control erosion. The prevention of overgrazing helps to maintain plant hardiness and density and reduce erosion. Using rotation grazing and restricting use during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. High erodibility is the main management concern. Constructing access roads and trails along the contour, installing water bars, and keeping soil disturbance to a minimum will help to reduce runoff and prevent excessive erosion. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow for more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Slope and wetness in winter and spring are moderately limiting factors for the construction of dwellings, though slope severely limits the construction of small commercial buildings. Placing footing drains around foundations will help to remove excess subsurface water. Designing lots and landscaping to drain surface water away from buildings will provide added protection. Slope, the seasonal high water table, and frost action are moderate limitations for road construction. The use of well-compacted, coarse-textured base material and provision of adequate side ditches and culverts will help protect roads from damage caused by soil wetness and frost action. Constructing roads along the contour where possible and planting grasses on road banks will help to reduce erosion.

This map unit has severe limitations for septic tank absorption fields, due primarily to restricted permeability in the substratum, which prevents the soil from readily absorbing sewage tank effluent. Installing a larger-than-average leach field will help to overcome this limitation. Installing the distribution lines along the contour is generally needed to overcome the slope limitation. This soil is highly erodible when disturbed and vegetative cover is removed. Planting well-adapted grasses on exposed areas and mulching will help to reduce runoff and minimize erosion during construction operations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

330D—Bernardston very fine sandy loam, 15 to 25 percent slopes

This very deep, moderately steep, well drained soil is on the smooth, convex side slopes and footslopes of glaciated hills in the north-central part of the county. The areas are long and narrow and range from 6 to 120 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown very fine sandy loam

Subsoil:
3 to 14 inches, dark yellowish brown channery silt loam
14 to 21 inches, yellowish brown channery silt loam

Substratum:
21 to 26 inches, firm light olive brown channery silt loam
26 to 65 inches, very firm olive brown channery silt loam

Included with this soil in mapping are small areas of Charlton and Paxton soils in similar landscape positions as the Bernardston soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2.0 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland; though some areas are homesites. A few areas are pasture or orchards.

This map unit is suited to silage corn, legume hay, and grass-clover, but is not rated for sweet corn. It is highly erodible, particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed. The moderately steep slope restricts reseeding and fertilizing operations and the use of equipment. The soil is well suited to pasture grasses. Using rotation grazing and restricting grazing during wet periods will help maintain plant cover and control erosion. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is moderate. Steepness of slope and the hazard of erosion are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow for more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Moderately steep slopes are severe limitations for dwelling construction. Extensive land shaping is needed to develop sites for dwellings and small commercial buildings. Laying out buildings and lots to conform to the natural slope of the land will help to overcome the slope limitation. Designing roads along the contour helps to overcome the severe slope limitation, but extensive cutting and filling are generally required. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields. Because of the steepness of the slope and the restricted permeability in the substratum, installation of septic tank absorption fields on these soils can result in seepage of sewage effluent to the ground surface. Overcoming these limitations generally requires the installation of expensive and elaborate sewage disposal systems. This can be avoided by carefully selecting sites on soils having gentler slopes and unrestricted permeability. This map unit is highly erodible when the soils are disturbed and vegetative cover is removed. Planting well-adapted grasses on exposed areas and mulching help to minimize erosion during construction.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 4e

330E—Bernardston very fine sandy loam, 25 to 35 percent slopes

This very deep, steep, well drained soil is on the side slopes and footslopes of glaciated hills in the north-central part of the county. The areas are long and narrow and range from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark grayish brown very fine sandy loam

Subsoil:
3 to 14 inches, dark yellowish brown channery silt loam
14 to 21 inches, yellowish brown channery silt loam

Substratum:
21 to 26 inches, firm light olive brown channery silt loam
26 to 65 inches, very firm olive brown channery silt loam

Included with this soil in mapping are small areas of Paxton soils in similar landscape positions as the Bernardston soils, and Charlton soils where the topography is irregular. Small areas of slopes greater than 35 percent may also be encompassed in this map unit. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2.0 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland. A few areas are pasture.

This map unit is not rated for cultivated crops. It is highly erodible, particularly on slopes longer than 150 feet or where plant cover has been removed or disturbed. The steep slope restricts reseeding and fertilizing operations, the use of equipment, and almost prevents cultivation. This map unit is suited to pasture grasses. Rotation grazing and restricting grazing during wet periods are necessary to maintain pasture seeding, prevent soil compaction, and minimize runoff and erosion.

Potential productivity for both eastern white pine and northern red oak is moderate. Steepness of slope and the hazard of erosion are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and keeping soil disturbance to a minimum will help to reduce runoff and prevent excessive erosion. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Because of steep slopes, this map unit has severe limitations as a site for building and road construction. Steep slopes and restricted permeability in the substratum are severe limitations for septic tank absorption fields. These limitations can be reduced or avoided by the selection of sites on better-suited soils.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6e

335B—Rainbow silt loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is on the smooth toeslopes and on hill crests of uplands in the southern part of the county. The areas are irregular in shape and range from 6 to 320 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 22 inches, yellowish brown silt loam
22 to 32 inches, yellowish brown very fine sandy loam with faint brownish yellow masses of iron accumulation and prominent light brownish gray redoximorphic depletions

Substratum:
32 to 39 inches, light olive gray gravelly sandy loam with prominent yellowish brown masses of iron accumulation
39 to 65 inches, firm olive gravelly sandy loam

Included with this soil in mapping are small areas of Broadbrook and Paxton soils on rises in the landscape and Woodbridge soils in similar landscape positions as the Rainbow soils. Also included are areas where slopes exceed 8 percent. Minor soils make up about 10 percent of this unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are cropland or sites for nursery stock. Some areas are homesites.

This map unit is well suited to cultivated crops, hay, and pasture. Planting may be delayed in the spring or harvest delayed in the fall by the high seasonal water table. Drainage is needed for maximum crop yields and the most efficient use of machinery, but the firm substratum increases the difficulty of installing drainage systems. The main pasture management concern should be the prevention of overgrazing that reduces the hardiness and density of desirable plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce soil compaction.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Wetness is a severe limitation for the construction of dwellings with basements. Constructing buildings without basements or above the seasonal high water table or installing footing drains around foundations where basement floors lie more than 2 feet below the surface will help to avoid interior damage caused by the seasonal high water table. Potential frost action is a severe limitation for local streets and roads. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect roads from damage caused by soil wetness and frost action.

Due to its seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic absorption fields. Installing a larger-than-average leach field in a mound of more suitable fill material will help to overcome these limitations. Where suitable drainage outlets are available, placing curtain drains around the leach field helps to remove excess subsurface water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

336B—Rainbow silt loam, 3 to 8 percent slopes, very stony

This very deep, gently sloping, moderately well drained soil is on the smooth upper slopes and at toeslopes of uplands in the southern part of the county. The areas are irregular in shape and range from 6 to 90 acres in size. Stones cover 0.1 to 3 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark brown silt loam

Subsoil:
8 to 22 inches, yellowish brown silt loam
22 to 32 inches, yellowish brown very fine sandy loam with faint brownish yellow masses of iron accumulation and prominent light brownish gray redoximorphic depletions

Substratum:
32 to 39 inches, light olive gray gravelly sandy loam with prominent yellowish brown masses of iron accumulation
39 to 65 inches, firm olive gravelly sandy loam

Included with this soil in mapping are small areas of very stony Broadbrook and extremely stony Paxton soils on rises in the landscape and very stony Woodbridge soils in similar landscape positions as the Rainbow soils. Also included are areas where slopes exceed 8 percent, and areas with more surface stones. Minor soils comprise about 10 percent of this unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland. Some areas are homesites, and a few acres are pasture.

This map unit is poorly suited to cultivated crops because of surface stones. It is not rated for silage corn, sweet corn, or hay. Stones and boulders make operation of conventional farming equipment difficult. The soil is suited to pasture and orchards. A pasture management concern is the prevention of overgrazing, which reduces the hardiness and density of desirable plants and exposes the soil to erosion. Proper stocking rates, timely grazing, and restricting use during wet periods help maintain plant densities and reduce surface compaction.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Wetness is a severe limitation for the construction of dwellings with basements. Constructing buildings with basement floors above the seasonal high water table or installing footing drains when basement floors lie more than 2 feet below the surface will help to avoid interior damage caused by the seasonal high water table. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by frost action. Building roads along the contour and planting well-adapted grasses will help reduce road bank erosion.

Because of the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average leach field in a mound of more suitable fill material will help to overcome these limitations. Where suitable outlets are available, placing curtain drains around the leach field may help to redirect excess subsurface water. Large stones in the soil may hinder excavation operations and the installation of septic tank absorption field distribution lines.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

340B—Broadbrook very fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on the smooth, convex crests and upper side slopes of glaciated hills in the southern and central parts of the county. The areas are oval or irregular in shape and range from 6 to 330 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, moderately decomposed leaf litter
2 to 10 inches, dark yellowish brown very fine sandy loam

Subsoil:
10 to 20 inches, light olive brown gravelly very fine sandy loam

Substratum:
20 to 65 inches, firm olive gravelly fine sandy loam with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of Paxton soils in similar landscape positions as the Broadbrook soils, Narragansett soils on footslopes and toeslopes, and Rainbow soils in depressions. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, very slow or slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of these soils are woodland, though some parts are homesites. A few areas are hayland, pasture, or orchards.

This map unit is well suited to cultivated crops, hay, orchards, and pasture. Farming on the contour, stripcropping, and using cover crops and grasses and legumes in the cropping system help to reduce runoff and control erosion. The prevention of overgrazing helps to maintain plant hardiness and density and reduce erosion. Rotation grazing and restricting grazing during wet periods help to prevent soil compaction and maintain desirable plant densities. These soils are on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Wetness is a moderately limiting factor for dwelling construction. Constructing buildings with the basement floor above the seasonal high water table or installing footing drains around foundations will help to avoid interior damage caused by the seasonal high water table. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields. Restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. Installing a larger-than-average leach field will help to overcome this limitation. Where suitable drainage outlets are available, placing curtain drains around the leach field may help to remove excess subsurface water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

340D—Broadbrook very fine sandy loam, 8 to 25 percent slopes

This very deep, rolling to hilly, well drained soil is on the smooth, convex side slopes of glaciated hills in the southern and central parts of the county. The areas are oval or irregular in shape and range from 6 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, moderately decomposed leaf litter
2 to 10 inches, dark yellowish brown very fine sandy loam

Subsoil:
10 to 20 inches, light olive brown gravelly very fine sandy loam

Substratum:
20 to 65 inches, firm olive gravelly fine sandy loam with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of Paxton soils in similar landscape positions as the Broadbrook soils, Narragansett soils on footslopes and toeslopes, and Rainbow soils in depressions. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, very slow or slow in the substratum

Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though a few areas are homesites.

This map unit is well suited to cultivated crops and pasture. The main management concern is high erodibility, particularly on slopes longer than 150 feet. Farming on the contour, stripcropping, and using diversions, cover crops, and grasses and legumes in the cropping system help to reduce runoff and control erosion. The main pasture management objective is the prevention of overgrazing to maintain plant hardiness and density and to reduce erosion. Rotation grazing and restricting use during wet periods help to prevent soil compaction and maintain desirable plant densities. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. High erodibility is the main management concern. Constructing access roads and trails along the contour, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition is moderate if conifers are grown. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites.

Slope is a severe limitation for the construction of dwellings and local roads. Placing footing drains around foundations will help to redirect excess subsurface water. Land shaping may be necessary in some areas. Designing lots to drain surface water away from buildings will provide added protection. This map unit is highly erodible when the soil surface is disturbed and vegetative cover is removed. Constructing roads along the contour where possible will help to reduce erosion. Using well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect roads from damage caused by frost action.

This map unit has severe limitations for septic tank absorption fields. Restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. Installing a larger-than-average leach field will help to overcome this limitation. Installing the sewage distribution lines along the contour will help to overcome limitations posed by the steepness of the slopes. Planting well-adapted grasses on exposed areas, and mulching during construction operations will help to reduce runoff and minimize erosion.

This map unit has good potential for woodland wildlife.

Capability subclass: 4e

341B—Broadbrook very fine sandy loam, 3 to 8 percent slopes, very stony

This very deep, gently sloping, well drained soil is on the smooth, convex crests and upper side slopes of glaciated hills in southern and central parts of the county. The areas are oval or irregular in shape and range from 6 to 130 acres. Stones cover 0.1 to 3 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, moderately decomposed leaf litter
2 to 10 inches, dark yellowish brown very fine sandy loam

Subsoil:
10 to 20 inches, light olive brown gravelly very fine sandy loam

Substratum:
20 to 65 inches, firm olive gravelly fine sandy loam with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of extremely stony Paxton soils in similar landscape positions as the Broadbrook soils, very stony Narragansett soils on footslopes and toeslopes, and very stony Rainbow soils in depressions. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas are homesites.

Surface stones hinder the operation of conventional farming equipment for cultivated crops, and may need to be removed. These soils are poorly suited to pastures because of surface stones. This map unit is on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow for growth that is more vigorous. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of harvesting and planting equipment.

This map unit has moderate limitations as a site for the construction of dwellings. Constructing buildings with the basement floor above the seasonal high water table or installing footing drains around foundations will help to avoid interior damage caused by the seasonal high water table. Large stones and boulders may hinder excavation of foundations and roads. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

This map unit has severe limitations for septic tank absorption fields. Restricted permeability in the substratum prevents the soil from readily absorbing sewage effluent. Installing a larger-than-average drainage field may help to overcome this limitation. Where suitable drainage outlets are available, curtain drains around the leach field help to remove excess subsurface water. Large stones in the soil may hinder the installation of sewage distribution lines.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

341C—Broadbrook very fine sandy loam, 8 to 15 percent slopes, very stony

This very deep, strongly sloping, well drained soil is on the smooth, convex side slopes of glaciated hills in the southern and central parts of the county. The areas are oval or irregular in shape and range from 6 to 120 acres in size. Stones cover 0.1 to 3 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, moderately decomposed leaf litter
2 to 10 inches, dark yellowish brown very fine sandy loam

Subsoil:
10 to 20 inches, light olive brown gravelly very fine sandy loam

Substratum:
20 to 65 inches, firm olive gravelly fine sandy loam with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of extremely stony Paxton soils in similar landscape positions as the Broadbrook soils, and very stony Rainbow soils along drainage swales. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though a few areas are homesites.

Surface stones hinder the operation of conventional farming equipment for cultivated crops, and may need to be removed. These soils are poorly suited to improved pasture because of the surface stones. The main pasture management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, prevent soil compaction, and reduce erosion. This map unit is found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Constructing access roads and trails along the contour, installing water bars, and minimizing soil disturbance will help to prevent erosion. Large stones on the surface may hinder the operation of planting and harvesting equipment.

Slope and shallow depth to the saturated zone are moderately limiting factors for dwelling and local road construction. Land shaping is needed, and large stones and boulders may hinder excavation operations. The soil is highly erodible when its surface is disturbed and plant cover is removed. Laying out buildings and lots to conform to the natural slope of the land will help to overcome the limitation posed by the slope and help to minimize erosion in disturbed areas. Designing roads along the contours will help to overcome the slope limitation and reduce erosion. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Restricted permeability in the substratum is a severe limitation for septic tank absorption fields. The restricted permeability prevents the soil from readily absorbing sewage effluent. Installing a larger-than-average leach field with distribution lines laid along the contours will help to overcome these limitations. Large stones may hinder the installation of distribution lines. Planting well-adapted grasses on exposed areas and mulching during construction help to minimize erosion.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

341D—Broadbrook very fine sandy loam, 15 to 25 percent slopes, very stony

This very deep, moderately steep, well drained soil is on the smooth, convex side slopes and footslopes of glaciated hills in the southern and central parts of the county. The areas are oval or irregular in shape and range from 6 to 90 acres. Stones cover 0.1 to 3 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows:

Surface layers:
0 to 2 inches, moderately decomposed leaf litter
2 to 10 inches, dark yellowish brown very fine sandy loam

Subsoil:
10 to 20 inches, light olive brown gravelly very fine sandy loam

Substratum:
20 to 65 inches, firm olive gravelly fine sandy loam with prominent yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of extremely stony Paxton soils in similar landscape positions as the Broadbrook soils, and very stony Narragansett soils on footslopes and toeslopes. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 2 feet, February-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland.

This map unit is poorly suited to cultivated crops. Susceptibility to erosion is a management concern, particularly on slopes longer than 150 feet or where the plant cover has been removed or disturbed. Surface stones and moderately steep slopes restrict the use of equipment. The main pasture management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain vegetative cover and prevent soil compaction.

Potential productivity for both eastern white pine and northern red oak is high. Steepness of slope and high erodibility are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and keeping soil disturbance to a minimum will help to reduce runoff and prevent excessive erosion. Plant competition is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

Steep slopes and large stones severely limit this map unit's usefulness for dwelling construction sites. Extensive land shaping is needed, and large stones may hinder excavation operations. Designing buildings and lots to conform to the natural slope of the land will help to overcome the limitation posed by the steepness of the slopes. Designing roads along the contour helps to overcome this limitation, but extensive cutting and filling are generally required. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage from frost action.

This map unit has severe limitations for septic tank absorption fields. Due to steep slopes and restricted permeability in the substratum, installation of septic tank absorption fields can result in seepage of sewage effluent to the ground surface. Overcoming these limitations generally requires the installation of expensive sewage disposal systems. This expense may be avoided by selecting sites on soils having gentler slopes and unrestricted permeability. These soils are highly erodible when the soil surface is disturbed and vegetative cover is removed. Planting well-adapted grasses on exposed areas and mulching during construction help to minimize erosion.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

345A—Pittstown silt loam, 0 to 3 percent slopes

This very deep, nearly level, moderately well drained soil is on the smooth crests of glaciated hills. The areas are oval or irregular in shape and range from 6 to 20 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown silt loam

Subsoil:
2 to 8 inches, dark yellowish brown silt loam
8 to 17 inches, olive silt loam with prominent yellowish red masses of iron accumulation

Substratum:
17 to 65 inches, extremely firm olive gray channery silt loam with prominent yellowish red and yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of Bernardston soils on slight rises in the landscape, Ridgebury soils in depressions and drainageways, and

Woodbridge soils in similar landscape positions as the Pittstown soils. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 3.0 feet, November-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland. Some areas have been developed for homesites. A few areas are cropland, pasture, or orchards.

This map unit is suited to silage corn, orchards, and pasture. It is well suited to grass-clover and grass-legume hay, but not rated for sweet corn. The perched high water table can delay planting in spring or harvesting in fall. Drainage is necessary for optimum crop growth and the most efficient use of machinery. The firm substratum increases the difficulty of installing drainage systems. Pasture grasses that can tolerate seasonal wetness are best suited to this soil. Using rotation grazing and restricting grazing during wet periods help to prevent compaction of the soil surface and maintain desirable plant densities. These soils are found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has moderate limitations for the construction of dwellings without basements, and severe limitations for the construction of dwellings with basements. Constructing buildings with basement floors above the seasonal high water table and designing landscaping to drain surface water away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors lie more than 2 feet below the surface, placing footing drains around foundations will help to remove excess subsurface water. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action.

Due to the seasonal high water table and restricted permeability in the substratum, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average leach field in a mound of more suitable fill material will help to overcome these limitations.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 2w

345B—Pittstown silt loam, 3 to 8 percent slopes

This very deep, gently sloping, moderately well drained soil is on the smooth crests, upper side slopes, and toeslopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 170 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown silt loam

Subsoil:
2 to 8 inches, dark yellowish brown silt loam
8 to 17 inches, olive silt loam with prominent yellowish red masses of iron accumulation

Substratum:
17 to 65 inches, extremely firm olive gray channery silt loam with prominent yellowish red and yellowish brown masses of iron accumulation

Included with this soil in mapping are small areas of Bernardston soils on slightly higher elevations, Ridgebury soils in depressions and drainageways, and Woodbridge soils in similar landscape positions as the Pittstown soils. In about 30 percent of these areas, up to 3 percent of the land surface is covered by stones. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or moderately slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 3.0 feet, November-April; perched for brief periods
Hydrologic group: C

Most areas of this map unit are woodland, though some areas have been developed for homesites. A few areas are cropland, pasture, or orchards (fig. 18).

This map unit is suited to silage corn, orchards, and pasture. It is well suited to grass-clover and grass-legume hay, but is not rated for sweet corn. Wetness and susceptibility to erosion are management concerns. Farming on the contour, stripcropping, and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and control erosion. The perched high water table may delay planting in spring or harvesting in fall. Drainage is necessary for optimum crop growth and the most efficient use of machinery. The firm substratum increases the difficulty of installing drainage systems. Pasture grasses that can tolerate seasonal wetness are best suited to this soil. The prevention of overgrazing helps to maintain plant hardiness and density and reduce erosion. Using rotational grazing and restricting use during wet periods help to prevent compaction and maintain desirable plant densities. These soils are found on hills, where air drainage provides orchards with some protection from frost.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has severe limitations for the construction of dwellings with basements and moderate limitations for the construction of dwellings without basements, due to wetness. Constructing buildings with basement floors above the seasonal high water table and landscaping so that surface water is drained away from buildings will help to avoid interior damage caused by the seasonal high water table. Where basement floors lie more than 2 feet below the ground surface, placing footing drains around foundations will help to remove excess subsurface water. Constructing

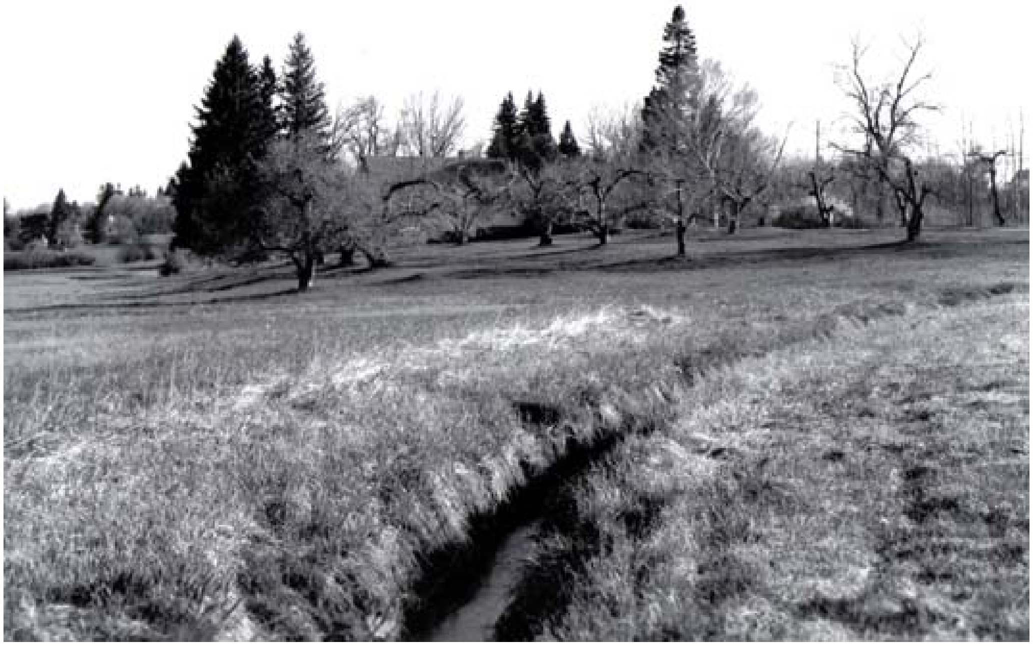

Figure 18.—Ridgebury soils along the drain and Pittstown soils in the middle ground and along the right side of the photo are used here for hay production. The fruit trees on the knoll are on a unit of Charlton-Hollis-Rock outcrop soils.

roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage caused by soil wetness and frost action. Planting well-adapted grasses on exposed areas, and mulching during construction help to reduce runoff and prevent excessive erosion.

Due to the seasonal high water table and restricted permeability, this map unit has severe limitations for septic tank absorption fields. Installing a larger-than-average leach field in a mound of more suitable fill material will help to overcome these limitations.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 2e

405B—Charlton fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on toeslopes of hills and on uplands. The areas are irregular in shape and range from 6 to 140 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In some areas, the surface layer is very fine sandy loam. In the north-central part of the county, this soil has a high content of flat rock fragments.

Included with this soil in mapping are areas generally smaller than 6 acres each of Ridgebury and Whitman soils in depressions and along drainage swales. Also included are Pittstown and Woodbridge soils in the low areas, Paxton soils on smooth portions of the landscape, and Canton and Narragansett soils in similar landscape positions as the Charlton soils. Also included are areas of Charlton soils where stones cover up to 3 percent of the surface. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland, though some areas are homesites. A few areas are cropland or pasture.

This map unit is well suited to cropland or pasture. Susceptibility to erosion is a management concern. Farming on the contour or across the slope, terracing, strip cropping, rotating crops, and using cover crops and conservation tillage help to reduce erosion. Using cover crops and incorporating grasses and legumes in the cropping system help to improve tillage. Mixing crop residues and manure into the surface layer improves tillage and increases the water holding capacity. These soils are suitable for planting and managing orchards.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Thinning crowded stands to standard stocking levels will allow more-vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Trees suitable for planting are: white pine, red spruce, and red pine.

With the exception of having moderate limitations for small commercial buildings, this map unit has no major limitations for building site development, local road construction, or the construction of septic tank absorption fields.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

405C—Charlton fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping, well drained soil is on side slopes and footslopes of hills, and on uplands. The areas are irregular in shape and range from 6 to 70 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In some areas, the surface layer is very fine sandy loam. In the north-central part of the county, this soil has a high content of flat rock fragments.

Included with this soil in mapping are areas on knobs of Canton soils and soils that are 20 to 40 inches deep to bedrock. Also included are Ridgebury and Woodbridge soils in depressions and along drainageways, and areas of Charlton soils where stones cover as much as 3 percent of the surface. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland, though some parcels are homesites. A few areas are used as cropland or pasture.

This map unit is well suited to cropland or pasture, but is highly erodible. Farming on the contour or across the slope, terracing, stripcropping, rotating crops, and using cover crops and conservation tillage help to reduce erosion. Incorporating grasses and legumes into the cropping system and using cover crops help to improve tillage. Mixing crop residues and manure into the surface layer improves tillage and increases the water holding capacity. This map unit is suitable for orchards.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Trees suitable for planting are: white pine, red spruce, and red pine.

Slope is a moderate limitation for dwelling sites and local streets and roads. The limitations can be overcome by designing dwellings or routes to conform to the natural slope or by reshaping the land.

This map unit has moderate limitations for septic tank absorption fields because of its slope. Grading or filling or both may be necessary for some installations.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

407B—Charlton fine sandy loam, 3 to 8 percent slopes, extremely stony

This very deep, gently sloping, well drained soil is on uplands. Stones and boulders cover 3 to 15 percent of the surface. The areas are irregular in shape and range from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In some areas, the surface layer is very fine sandy loam. In the north-central part of the county, this soil has a high content of flat rock fragments.

Included with this soil in mapping are small areas of Ridgebury soils along drainage swales and in depressions, Newport soils on smooth slopes, and Canton soils on knobs. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group B

Most areas of this map unit are woodland. A few areas are used as pasture.

This map unit is not rated for cultivated crops, hay, or pasture. The stones on the surface preclude almost all use of farm machinery.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Trees suitable for planting are white pine, red spruce, and red pine.

Stones present a slight limitation for most building site development, except for the construction of small commercial buildings, for which they pose a moderate limitation. This limitation may be overcome by additional site preparation.

This map unit has slight limitations for septic tank absorption fields, but stone removal and additional excavation will be necessary during installation.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

407C—Charlton fine sandy loam, 8 to 15 percent slopes, extremely stony

This very deep, strongly sloping, well drained soil is on uplands. Stones and boulders cover 3 to 15 percent of the surface. The areas are irregular in shape and range from 6 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In some areas, the surface layer is very fine sandy loam. In the north-central part of the county, this soil has a high content of flat rock fragments.

Included with this soil in mapping are small areas of Ridgebury soils along drainage swales and in depressions, Newport soils on smooth slopes, and Canton soils on knobs. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland.

This map unit is not rated for cultivated crops, hay, or pasture. The stones on the surface preclude almost all use of farm machinery.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Trees suitable for planting are white pine, red spruce, and red pine.

This map unit has moderate limitations for the construction of dwellings with or without basements, due to slope. With the additional issue of the stones in the soil, these factors together present severe limitations for small commercial building construction, though this limitation may be overcome by additional site preparation.

This map unit has moderate limitations for septic tank absorption fields. Stone removal and additional excavation due to slope will be necessary during installation.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

407D—Charlton fine sandy loam, 15 to 25 percent slopes, extremely stony

This very deep, moderately steep, well drained soil is on uplands. Stones and boulders cover 3 to 15 percent of the surface. The areas are irregular in shape and range from 6 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In some areas, the surface layer is very fine sandy loam. In the north-central part of the county, this soil has a high content of flat rock fragments. In some areas, stones cover less than 3 percent of the surface.

Included with this soil in mapping are small areas of Ridgebury soils in low swales and depressions, Newport soils on smooth slopes, and Canton soils on knobs. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid throughout
Available water capacity: moderate
Soil reaction : very strongly acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland.

This map unit is not rated for cultivated crops, hay, or pasture. The stones on the surface preclude almost all use of farm machinery.

Potential productivity for both eastern white pine and northern red oak is moderate. Steepness of slope and high erodibility are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is slight. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. The large stones on the surface may hinder the operation of planting and harvesting equipment.

Stones and steep slopes severely limit building site development. Extensive land shaping is needed to prepare sites for dwellings, small commercial buildings, and roads.

Due to its slope, this map unit has severe limitations for septic tank absorption fields. Stone removal and grading and filling may be necessary during installation.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

415B—Narragansett silt loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 170 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown very gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

Included with this soil in mapping are small areas of Canton soils in similar landscape positions as the Narragansett soils, and Haven soils in low, nearly level areas. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, moderately rapid or rapid in the substratum
Available water capacity: high
Soil reaction: extremely acid to moderately acid throughout

Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland, though some areas are homesites. A few pieces are used as pasture.

This map unit is well suited to silage corn, hay, and pastures. It is not rated for sweet corn. Erosion is a management concern. Stripcropping, tilling along the contours, and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and control erosion.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has no major limitations for the construction of dwellings. Frost action moderately limits its use for road construction.

This map unit has moderate limitations for septic tank absorption fields, as Narragansett soils readily absorb but are poor filters of sewage effluent. This inadequate treatment capability can cause pollution of ground water. Low density development or large lot sizes may help reduce the impact on ground water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

415C—Narragansett silt loam, 8 to 15 percent slopes

This very deep, strongly sloping, well drained soil is on uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 100 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown very gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

Included with this soil in mapping are small areas of Canton soils and Windsor soils in similar landscape positions as the Narragansett soils, and Haven soils in low, nearly level areas. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, moderately rapid or rapid in the substratum
Available water capacity: high
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some areas are used for homesites. A few small sections are used as pasture.

This map unit is well suited to cultivated crops, hay, and pastures. Susceptibility to erosion is a management concern. Contour tilling, stripcropping, and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and control erosion.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Designing buildings to conform to the natural slope of the land will help to overcome the moderate slope limitation for the construction of dwellings, and will reduce the hazard of erosion in disturbed areas. Land shaping may be necessary in some areas. Constructing roads along the contours where possible will mitigate the effects of slope. The use of well-compacted, coarse-textured base material and adequate side ditches and culverts will help protect the roads from damage caused by frost action. Planting well-adapted grasses will help to reduce road bank erosion.

This map unit has moderate limitations for septic tank absorption fields, due to its slope and poor filtering capabilities. Installing distribution lines across the slope or using seepage pits will help overcome the slope limitation. As these soils readily absorb but are poor filters of sewage effluent, they may allow pollution of ground water. Low density development or large lot sizes can reduce the impact on ground water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

415D—Narragansett silt loam, 15 to 25 percent slopes

This very deep, moderately steep, well drained soil is on side slopes and footslopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown very gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

Included with this soil in mapping are small areas of Canton soils and Windsor soils in similar landscape positions as the Narragansett soils, and Haven soils in low, nearly level areas. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, moderately rapid or rapid in the substratum
Available water capacity: high
Soil reaction: extremely acid to moderately acid throughout

Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some areas are used for homesites. A few small pieces are pasture.

This map unit is suited to silage corn and well suited for grass hay and grass-clover. Susceptibility to erosion is a management concern. The map unit is not rated for sweet corn. Contour tilling, stripcropping, and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and erosion.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Designing buildings to conform to the natural slope of the land will help to overcome the severe slope limitation for the construction of buildings, and will reduce the hazard of erosion where the soil surface has been disturbed. Land shaping may be necessary in some cases. Constructing roads along the contour where possible will lessen the severe slope limitation, and planting well-adapted grasses will help to reduce road bank erosion.

This map unit has severe limitations for septic tank absorption fields, due to slope. Installing distribution lines across the slope or using seepage pits, will help overcome the slope limitation. This soil readily absorbs but may not adequately filter sewage effluent, and it has the potential to cause pollution of ground water. Low density development or large lot sizes can help to reduce the impact on ground water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 4e

416B—Narragansett silt loam, 3 to 8 percent slopes, very stony

This very deep, gently sloping, well drained soil is on uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 180 acres in size. Stones cover 0.1 to 3 percent of the land surface. In some map units, the stones are in isolated clusters.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown very gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Canton soils in similar landscape positions as the Narragansett soils, Haven soils in low, level spots, and extremely stony Scituate soils in depressions and along drainageways. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, moderately rapid or rapid in the substratum
Available water capacity: high
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some areas are used for homesites. A few small pieces are used as pasture.

The surface stones, unless removed, make this map unit poorly suited to cultivated crops. Stones and boulders hinder operations with conventional farming equipment. The map unit is suited to pasture and orchards.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the use of harvesting and planting equipment.

This map unit has slight limitations for the construction of dwellings, and moderate limitations for the construction of roads. Constructing roads on well-compacted, coarse-textured base material and providing adequate side ditches and culverts will help protect the roads from damage from frost action.

This map unit has moderate limitations for septic tank absorption fields. Narragansett soil readily absorbs but may not adequately filter sewage effluent, and ground water may become polluted. Low density development or large lot sizes can help to reduce the impact on ground water. The large stones in these soils may hinder excavation operations and installation of absorption field distribution lines.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

416C—Narragansett silt loam, 8 to 15 percent slopes, very stony

This very deep, strongly sloping, well drained soil is on uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 150 acres in size. Stones cover 0.1 to 3 percent of the land surface. In some of these map units, the stones are in isolated clusters.

The typical sequence, depth, and composition of the layers of this soil are as follows—
Surface layers:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown very gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Canton and Charlton soils in similar landscape positions and extremely stony Scituate soils along drainageways. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, moderately rapid or rapid in the substratum
Available water capacity: high
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some areas are used for homesites.

The surface stones, unless removed, make this map unit poorly suited to cultivated crops. Stones and boulders hinder operations with conventional farming equipment. This map unit is suited to pasture and orchards.

Potential productivity for both eastern white pine and northern red oak is moderate. Plant competition at the time of regeneration is slight. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the use of harvesting and planting equipment.

This map unit has moderate limitations for the construction of dwellings. Designing buildings to conform to the natural slope of the land will help to overcome the moderate slope limitation and reduce the hazard of erosion. Frost action and slope are moderate limitations for construction of local roads and streets.

This map unit has moderate limitations for septic tank absorption fields, due to slope and the fact that the soil readily absorbs but is a poor filter of sewage effluent. The soil's inadequate filter capacity may result in the pollution of ground water. Low density development and large lot sizes can help to reduce the impact on ground water. Large stones may hinder excavation operations and the installation of septic tank absorption field distribution lines.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

416D—Narragansett silt loam, 15 to 25 percent slopes, very stony

This very deep, moderately steep, well drained soil is on side slopes and footslopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 60 acres in size. Stones cover 0.1 to 3 percent of the land surface. In some of these map units, the stones are in isolated clusters.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layers:
0 to 2 inches, slightly decomposed pine needles, leaves, and woody material
2 to 7 inches, dark brown silt loam

Subsoil:
7 to 35 inches, yellowish brown silt loam

Substratum:
35 to 60 inches, light olive brown very gravelly loamy sand
60 to 65 inches, light olive brown very gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Canton and Charlton soils in similar landscape positions as the Narragansett soils. Minor soils comprise about 20 percent of this map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderately rapid in the subsoil, moderately rapid or rapid in the substratum
Available water capacity: high
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. A few areas are used for homesites.

This map unit is poorly suited to cultivated crops due to moderately steep slopes and surface stones. The soils are suited to pasture, but a permanent plant cover should be maintained to help reduce runoff and control erosion.

Potential productivity for both eastern white pine and northern red oak is moderate. Steepness of slope and the presence of surface stones are the main management concerns. Stones may hinder the use of harvesting and planting equipment. Constructing access roads and trails with grades of between 2 and 10 percent and installing water bars will help to prevent excessive soil erosion. Minimizing soil disturbance will help retain leaf cover, which helps to reduce runoff and erosion. Thinning crowded stands to standard stocking levels will allow more vigorous growth. Diseased, poorly formed, and otherwise undesirable trees should receive priority for removal during thinning. Shelterwood cutting, seed-tree cutting, and clearcutting may be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Surface stones and moderately steep slopes pose severe limitations for building site development and road construction. Extensive land shaping is generally needed, and large stones may hinder excavation operations. Designing buildings, lots, and roads to conform to the natural slope of the land will help to overcome the slope limitation and the hazard of erosion in disturbed areas.

Because of steepness of slope, this map unit has severe limitations for septic tank absorption fields. Installing distribution lines across the slope or using seepage pits will help to prevent seepage of sewage effluent. Additional precautionary measures may be necessary to reduce the hazard of pollution. Stones may hinder the installation of septic tank absorption field distribution lines.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 6s

420B—Canton fine sandy loam, 3 to 8 percent slopes

This very deep, gently sloping, well drained soil is on shoulders of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 120 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of Charlton soils in similar landscape positions as the Canton soils; Montauk soils on broad, even slopes; and

Scituate soils in depressions and along drainageways. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are used as cropland or woodland. Some areas are homesites (fig. 19).

This map unit is well suited to cultivated crops, orchards or pasture. Erosion is a management concern. Farming on the contour, stripcropping, and using cover crops, grasses, and legumes in the cropping system help to reduce runoff and control erosion. Overgrazing is the main pasture management concern. Rotation grazing will help to maintain plant cover and prevent soil compaction. Ninety percent of the time, this map unit consists of 95 to 100 percent Canton and similar soils.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish

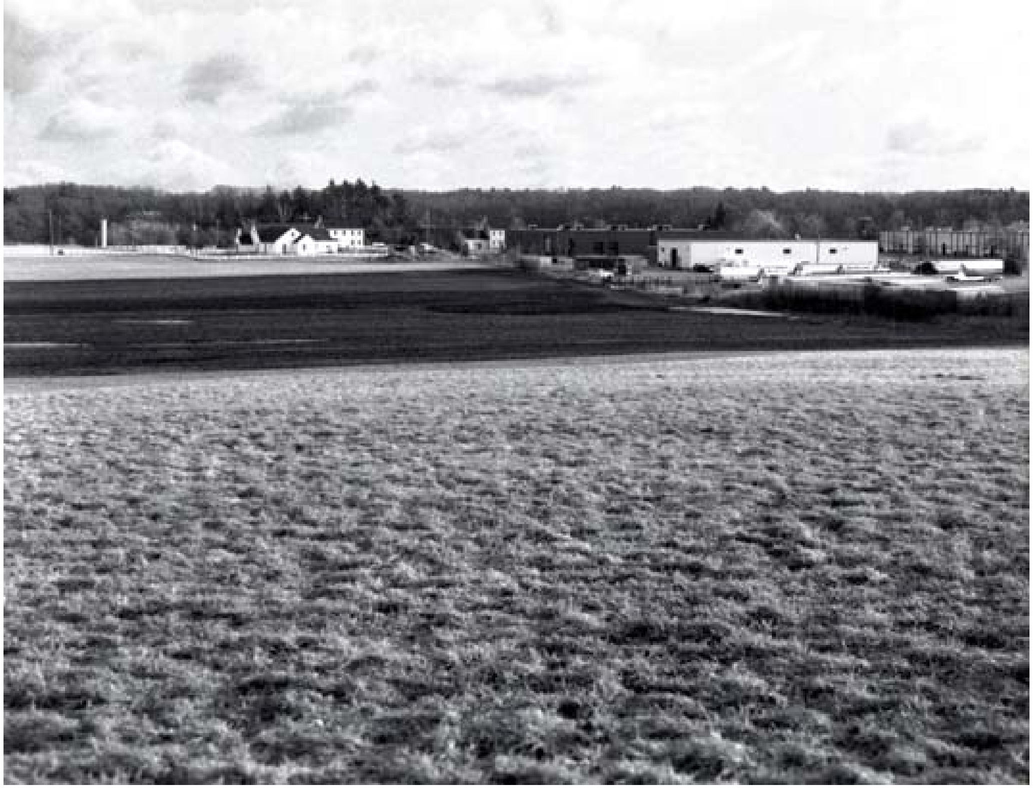

Figure 19.—The foreground soils of Canton fine sandy loam, 3 to 8 percent slopes, are used for hay. The dark area in the middle ground is a unit of Scio soil with wetter Raynham soil in its center. The commercial development is on a unit of Udorthents-Urban land. The farmhouse in the far background sits on Hinckley soils.

regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

This map unit has no major limitations for the construction of dwellings or local roads. It has severe limitations for septic tank absorption fields, as the soil readily absorbs but may not adequately filter sewage effluent, and ground water may become polluted. However, Canton soils are commonly in topographic positions that limit their ground water recharge potential. Increased lot size and less dense development can reduce the impact on ground water.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 2e

420C—Canton fine sandy loam, 8 to 15 percent slopes

This very deep, strongly sloping and well drained soil is on side slopes and toeslopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 60 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of Charlton soils in similar landscape positions as the Canton soils; Montauk soils on broad, even slopes; and Scituate soils along drainageways. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group B

Most areas of this map unit are cropland or woodland. Some areas are homesites.

This map unit is suited to silage corn. Erosion is a management concern, particularly on slopes more than 150 feet in length. It is not rated for sweet corn. Farming on the contour, stripcropping, and using cover crops, grasses and legumes in the cropping system help to reduce runoff and control erosion. This map unit is well suited to improved pasture. Overgrazing is the main pasture management concern. Rotation grazing will help to maintain plant cover, prevent compaction, and reduce erosion.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. High erodibility is the main woodland management concern. Constructing access roads and trails along the contour, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

Slope poses a moderate limitation for dwelling and local road construction. Designing buildings and lots to conform to the natural shape of the land will help to overcome this limitation and reduce erosion where the soil surface has been disturbed. Constructing roads along the contour, planting well-adapted grasses on exposed areas, and mulching will help to reduce runoff and prevent excessive erosion.

This map unit has severe limitations for septic tank absorption fields, as the soil readily absorbs but is a poor filter of sewage effluent. This inadequate filtering capability may result in the pollution of ground water. However, Canton soils are commonly in topographic positions that limit their ground water recharge potential. Larger lot sizes and low-density development can reduce the impact on ground water. Placing the distribution lines along the contour will help to overcome the slope limitation.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 3e

420D—Canton fine sandy loam, 15 to 25 percent slopes

This very deep, moderately steep, well drained soil is on the side slopes and footslopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 60 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of Charlton soils in similar landscape positions as the Canton soils, and Hinckley soils on footslopes. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some areas are used for homesites.

This map unit is suited to silage corn, but is highly erodible, particularly on slopes longer than 150 feet and where plant cover has been removed or disturbed. This map unit is not rated for sweet corn. The moderately steep slope restricts the operation of conventional farm equipment and may restrict reseeding and fertilizing operations. This map unit is well suited to pasture grasses. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, reduce soil compaction, and minimize erosion.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Steepness of slope and the hazard of erosion are the main management concerns. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings.

The moderately steep slopes severely limit building site development. Mulching and planting well-adapted grasses on exposed areas will help to reduce runoff and prevent excessive erosion. Designing buildings and lots to conform to the natural shape of the land will help to overcome the slope limitation and reduce erosion in disturbed areas, although extensive land shaping is required. Slope severely limits road construction. Constructing roads along the contour will help to overcome this limitation, but extensive cutting and filling are usually necessary.

This map unit has severe limitations for septic tank absorption fields. Steepness of slope and inadequate filtering capability are the main limiting factors. The soil readily absorbs but may not adequately filter sewage effluent, which can result in the pollution of ground water. However, Canton soils are commonly found in topographic positions that limit their ground water recharge potential. Increased lot size or less dense development can reduce the impact on ground water. Placing the distribution lines along the contour or using seepage pits will help to overcome the slope limitation.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: 4e

422B—Canton fine sandy loam, 3 to 8 percent slopes, extremely stony

This very deep, gently sloping, well drained soil is on upper side slopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 110 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Charlton soils in similar landscape positions as the Canton soils; extremely stony Montauk soils on broad, even slopes; and extremely stony Scituate soils in depressions and along drainageways. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum

Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland or homesites. A few areas are pasture.

Surface stones limit the use of this map unit for cultivated crops and improved pasture. The main pasture management concern is the prevention of overgrazing. Rotation grazing will help to maintain plant cover and prevent soil compaction.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of harvesting and planting equipment.

This map unit has no major limitations as a site for local road or dwelling construction. This soil has severe limitations for septic tank absorption fields, as the soil readily absorbs but may not adequately filter sewage effluent, which can result in the pollution of ground water. However, Canton soils are commonly in topographic positions that limit their ground water recharge potential. Low-density development and larger lot sizes can reduce the impact on ground water. Large stones may hinder excavation operations and installation of absorption field distribution lines.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

422C—Canton fine sandy loam, 8 to 15 percent slopes, extremely stony

This very deep, strongly sloping, well drained soil is on side slopes and toeslopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 150 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Charlton soils in similar landscape positions as the Canton soils; extremely stony Montauk soils on broad, even slopes; and extremely stony Scituate soils along drainageways. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate

Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some sections are used for homesites.

The surface stones limit the use of this map unit for cultivated crops and improved pasture. The main pasture management concern is the prevention of overgrazing. Rotation grazing will help to maintain plant cover, prevent soil compaction, and minimize erosion.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Constructing access roads and trails along the contours, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

Designing dwellings and roads to conform to the natural shape of the land will help to overcome the moderate slope limitation, and will reduce the possibility of erosion in areas where the soil surface has been disturbed. Planting well-adapted grasses on exposed areas and mulching will help to reduce runoff and prevent excessive erosion. Stones may hinder excavation operations.

This map unit has severe limitations for septic tank absorption fields, as the soil readily absorbs but is a poor filter of sewage effluent, which can result in the pollution of ground water. However, Canton soils are commonly in topographic positions that limit their ground water recharge potential. Large lot sizes and low-density development can reduce the impact on ground water. Placing the distribution lines along the contour will help to overcome the slope limitation. Stones may hinder the installation of distribution lines.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

422D—Canton fine sandy loam, 15 to 25 percent slopes, extremely stony

This very deep, moderately steep, well drained soil is on the side slopes and footslopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 60 acres in size. Stones cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Charlton soils in similar landscape positions as the Canton soils, and Hinckley soils on footslopes. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland.

This map unit is not rated for crop production and pasture; the surface stones and moderately steep slope hinder or prohibit the use of conventional farm equipment. The main pasture management concern is the prevention of overgrazing. Using rotation grazing and restricting grazing during wet periods will help to maintain plant cover, reduce soil compaction, and minimize erosion.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. Large stones on the surface may hinder the operation of planting and harvesting equipment.

The moderately steep slope severely limits building site development. Extensive land shaping is needed to prepare sites for dwellings and local roads. Large surface stones may hinder excavation operations. Designing buildings and roads to conform to the natural shape of the land will help overcome the slope limitation and reduce erosion in disturbed areas.

This map unit has severe limitations for septic tank absorption fields. The soils are steep, and readily absorb but are poor filters of sewage effluent, which can result in the pollution of ground water. However, this map unit is commonly in topographic positions that limit its ground water recharge potential. Large lot sizes and low-density development can reduce the impact on ground water. Placing leach field distribution lines along the contours or using seepage pits will help to overcome the slope limitation.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

424B—Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery

This very deep, gently sloping, well drained soil is on upper side slopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 150 acres in size. Boulders cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Charlton soils in similar landscape positions as the Canton soils; extremely stony Montauk soils on broad, even slopes; and extremely stony Scituate soils in depressions and along drainageways. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some sections are used for homesites.

Due to the abundance of large boulders on the surface, it is impractical to farm this map unit, as the boulders hinder or prohibit the use of conventional farm equipment. These soils can be used for pasture.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. The large boulders hinder the operation of harvesting and planting equipment.

This map unit has slight limitations for the construction of dwellings and local roads.

This map unit has severe limitations for septic tank absorption fields, as it readily absorbs but is a poor filter of sewage effluent. The inadequate filtering capability may result in the pollution of ground water. However, Canton soils are commonly in topographic positions that limit their ground water recharge potential. Larger lots and low-density development can reduce the impact on ground water. Large boulders hinder the installation of absorption field distribution lines.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

424C—Canton fine sandy loam, 8 to 15 percent slopes, extremely bouldery

This very deep, strongly sloping, well drained soil is on side slopes or toeslopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 50 acres in size. Boulders cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Charlton soils in similar landscape positions as the Canton soils and extremely stony Scituate soils along drainageways. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland. Some sections are used for homesites, while a few areas are pasture.

Due to the abundance of large surface boulders, it is impractical to farm this map unit, though it can be used for pasture. The boulders hinder or prevent the use of conventional farm equipment.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Constructing access roads and trails along the contours, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. The large boulders may hinder the operation of planting and harvesting equipment.

Designing dwellings and roads to conform to the natural shape of the land will help to overcome the moderate slope limitation for these uses, and will reduce erosion in disturbed areas. Land shaping is needed, and large boulders hinder excavation operations. Planting road banks and exposed areas with well-adapted grasses will help to minimize erosion.

This map unit has severe limitations for septic tank absorption fields. The soil readily absorbs but is a poor filter of sewage effluent, which can result in the pollution of ground water. However, Canton soils are commonly in topographic positions that limit their ground water recharge potential. Large lot sizes and low-density development can reduce the impact on ground water. Placing septic system distribution lines along the contours will help to overcome the slope limitation, though boulders may hinder the installation of the distribution lines.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

424D—Canton fine sandy loam, 15 to 25 percent slopes, extremely bouldery

This very deep, moderately steep, well drained soil is on the side slopes of uplands adjacent to plains and stream terraces. The areas are irregular in shape and range from 6 to 100 acres in size. Boulders cover 3 to 15 percent of the surface.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

Included with this soil in mapping are small areas of extremely stony Charlton and Hinckley soils in similar landscape positions as the Canton soils. Also included are areas where slopes exceed 25 percent, and small, sporadic areas where stones and boulders cover less than 3 percent of the surface. Minor soils comprise about 15 percent of this map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, rapid in the substratum.
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid throughout
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Most areas of this map unit are woodland.

This map unit is poorly suited for crop production and pasture. The abundant surface boulders and moderately steep slopes prohibit the use of conventional farm equipment. If the soil is used for pasture, restricted grazing will help to maintain plant cover, reduce soil compaction, and minimize erosion.

Potential productivity for eastern white pine is moderate. Potential productivity for northern red oak is low. Constructing access roads and trails with grades of between 2 and 10 percent, installing water bars, and minimizing soil disturbance will help to reduce runoff and prevent excessive erosion. Plant competition at the time of regeneration is moderate if conifers are grown. Thinning crowded stands, especially of diseased, poorly formed, or otherwise undesirable trees, to standard stocking levels will allow more vigorous growth. Shelterwood cutting, seed-tree cutting, and clearcutting can be used to establish regeneration or to provide suitable planting sites. Removal or control of competing vegetation may be necessary for optimum growth of newly established seedlings. The large boulders may hinder the operation of planting and harvesting equipment.

The moderately steep slopes and an abundance of boulders severely limit dwelling site development and road construction. Extensive land shaping is needed, and large boulders may hinder excavation operations. Designing buildings and roads to conform to the natural shape of the land may help to overcome the slope limitation. Planting well-adapted grasses and mulching exposed areas will help to reduce runoff and reduce erosion in disturbed areas.

This map unit has severe limitations for septic tank absorption fields. It has steep slopes and readily absorbs, but is a poor filter of sewage effluent, which can result in the pollution of ground water. However, Canton soils are commonly in topographic positions that limit their ground water recharge potential. Large lot sizes and low-density development can reduce the impact on ground water. Placing the distribution lines along the contour or using seepage pits will help to overcome the slope limitation. The installation of distribution lines may be difficult because of the large boulders in this soil.

This map unit has fair potential for woodland wildlife habitat.

Capability subclass: 7s

600—Pits, gravel

This unit consists of excavations in excessively drained to moderately well drained gravelly and sandy material on glacial outwash plains, terraces, kames and eskers. The pits were created by removing sand and gravel for construction purposes. The pits are 3 to 50 feet deep, the sides are typically steep, and the floor is level to rolling depending upon the nature of the underlying material and the presence of bedrock. In many map units, piles of stones and boulders are scattered over the gravel pit floor. The areas are irregular in shape and range from 6 to 300 acres in size.

Included in mapping are small pools of water or rock outcrops inside some of the pits. These areas may comprise up to 5 percent of the map unit area. The excavations are commonly irregular in shape, depending on the nature of the deposits and location of the deeded boundaries.

These pits are generally devoid of vegetation, although some older ones have scattered shrubs and grasses. Most pits are droughty due to their very low available water capacity. Some pits have been excavated to elevations below the seasonal high water table, and have standing water in the winter and spring. Permeability is rapid throughout.

The Pits, gravel map unit has severe limitations for farming and forest production because of very low available water for plant use. The unit is very poorly suited for wildlife habitat in general, though some birds prefer to nest in these areas.

This miscellaneous area has slight limitations as a site for dwelling construction and for recreational development. Onsite investigation is necessary for any proposed use. The hazard of contamination of ground water severely limits these areas for septic tank absorption fields.

This map unit has very poor potential for woodland wildlife habitat.

Capability subclass: none assigned

601—Pits, quarry

This unit consists of areas that have been excavated for rock products, mostly from granite, diorite, and slate. Quarries are on upland hills, and typically have vertical rock walls on the working face along the perimeter of the map units. Map units are round or rectangular in shape and range from 6 to 100 acres in size.

Pools of water may be at the bottom of some quarries, along with piles of quarried and broken rock, rock fragments, and rock dust.

Most of these areas are presently in quarrying operations. A few small areas have been abandoned, and remain unreclaimed and devoid of vegetation. Small areas of Urban land and Udorthents are included in mapping some quarries.

These areas have severe limitations for most uses. They require extensive site preparation and fill before they can be used for individual homesites or industrial development.

Capability subclass: none assigned

602—Urban land

This unit consists of areas where 85 percent of the land surface is covered by structures or impervious surfaces such as buildings, pavement, industrial sites, and railroad yards. These areas are mapped throughout the survey area, typically in central business districts and along major roads and highways (fig. 20). The areas are irregular in shape but may have sharp, angular boundaries. They range in size from 6 to 1,200 acres.

Because this map unit is covered by structures or impervious surfaces, almost all rainfall ends up as runoff. This excessive runoff must be controlled by a storm drainage system.

Included with this unit in mapping are areas of Udorthents, loamy soils and Udorthents, wet substratum soils. These inclusions often reflect the nature of the soil underlying the impervious surfaces. Rock outcrops are present in some units. Included areas comprise 15 percent of the mapped acreage.

Full identification of the underlying soil was not possible in the mapping process. A high level of site investigation is needed to assess the land's suitability for specific uses.

Capability subclass: none assigned

603—Urban land, wet substratum

This unit consists of areas where 85 percent of the land surface is covered by structures or impervious surfaces such as buildings, pavement, industrial sites, and railroad yards, and where the underlying soil is dominated by fill material overlying wet soils. The underlying wet soils may include Freetown, Saco, Scarboro, and Swansea. The most extensive areas of this map unit are along the Charles and Mystic Rivers in the cities of Cambridge, Somerville, and Everett. Smaller areas are

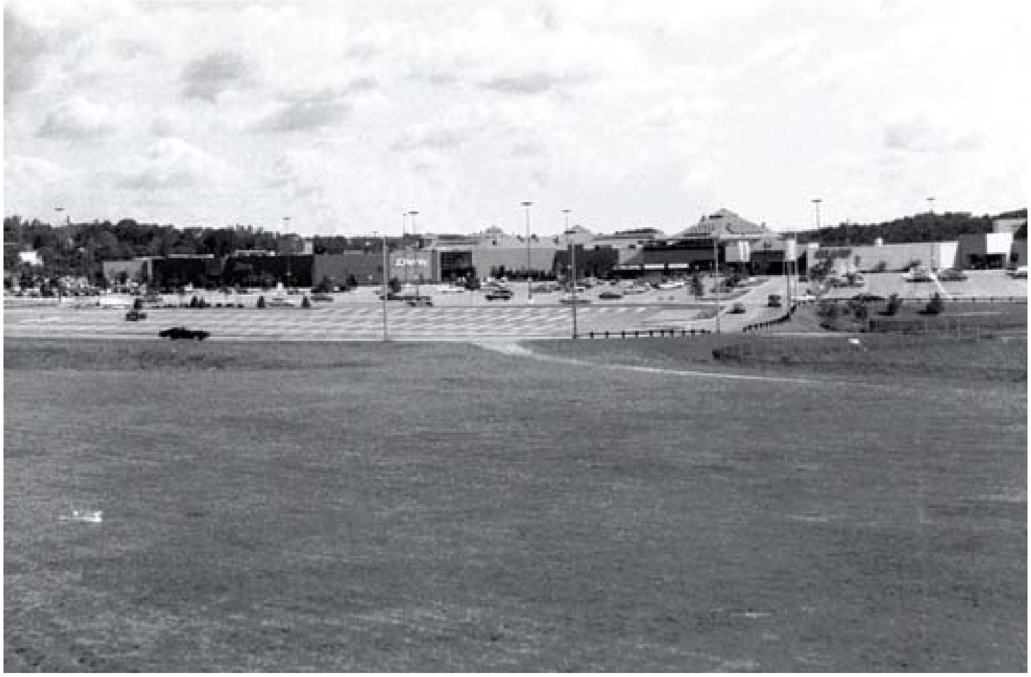

Figure 20.—An area of Udorthents, sandy, is in the foreground. A typical area of Urban land is in the background.

mapped throughout the county. The areas are irregular in shape range from 6 to 2,100 acres in size.

Because this map unit is covered by structures or impervious surfaces, almost all rainfall becomes runoff. A stormwater drainage system is generally required to control this excessive runoff. A water table may be present in the lower substratum.

Included with this unit in mapping are areas of Udorthents, loamy soils and Udorthents, wet substratum soils where the soil is exposed. These inclusions often reflect the nature of the soil underlying the impervious surfaces. Rock outcrops are present in some units. Minor soils and included areas comprise about 15 percent of the unit.

Full identification of the underlying soil was not possible in the mapping process. A high level of site investigation is needed to assess the land's suitability for specific uses.

Capability subclass: none assigned

621B—Scio-Urban land complex, 0 to 8 percent slopes

This unit consists of very deep, undulating, moderately well drained soils, and areas of Urban land on plains at low elevations. Individual areas of this unit are irregular in shape and range from 6 to 310 acres in size. The soils and Urban land in this complex are so intermingled that it was not practical to map them separately. This complex is about 40 percent Scio soils, 40 percent Urban land, and 20 percent other soils.

The typical sequence, depth, and composition of the layers of the Scio soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown very fine sandy loam

Subsoil:
8 to 22 inches, olive very fine sandy loam with faint olive gray redoximorphic depletions
22 to 35 inches, olive very fine sandy loam with faint pale olive masses of iron accumulation and distinct grayish brown redoximorphic depletions

Substratum:
35 to 65 inches, pale olive silt loam with faint olive masses of iron accumulation and faint olive gray redoximorphic depletions

A few areas have more silt in the surface layer and subsoil.

In the Urban land portion of this complex, the original soil is covered by impervious surfaces such as asphalt, concrete and buildings. In most places, the underlying soil has been cut away or covered by fill from surrounding areas.

Included in this complex in mapping are areas of Haven soils on subtle rises in the topography, and Sudbury and Tisbury soils in similar landscape positions as the Scio soils. Also included are areas in the Boston Basin and Mystic Lakes region, where there is clay in the subsoil and substratum. Minor soils comprise about 20 percent of the complex.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, moderately rapid or rapid in the substratum
Available water capacity: high
Soil reaction: very strongly acid or strongly acid above 30 inches, strongly acid or moderately acid below 30 inches
Depth to bedrock: more than 60 inches

Depth to seasonal high water table: 1.5 to 2.0 feet, March-May
Hydrologic group: B

Where this complex is mapped, land is committed to residential or commercial use.

Scio soil holds enough water to enable plants to tolerate short periods of drought.

Potential productivity for both eastern white pine and northern red oak is high in the Scio soils. The Urban land portions of this map unit are not rated for woodland products.

A seasonal high water table and slow permeability in the substratum of the Scio soil are severe limitations for building site development. Sump pumps and footing drains around foundations will help to remove excess subsurface water. Landscaping designed to drain surface water away from buildings will provide added protection. Constructing roads on well-compacted, coarse-textured base material will help protect the roads from frost damage.

The Scio soils have moderate limitations for the construction of dwellings without basements, and severe limitations for buildings with basements. Local road construction is severely limited by the possibility of frost action.

The seasonal high water table is a severe limitation for septic tank absorption fields. Placing the leach field in a mound of more suitable fill material will help to overcome this limitation.

This map unit has good potential for woodland wildlife habitat.

Capability subclass: Scio–2e; Urban land–none assigned

622C—Paxton-Urban land complex, 3 to 15 percent slopes

This complex consists of very deep, rolling, well drained Paxton and similar soils, and areas of Urban land on convex slopes of glaciated hills. The areas are oval or irregular in shape and range from 6 to 350 acres in size. These areas are 40 percent Paxton soils, 40 percent Urban land, and 20 percent other soils. The Paxton soils and Urban land occur in such intricate patterns that it was not practical to separate them at the scale of mapping.

The typical sequence, depth, and composition of the layers of the Paxton soils are as follows—
Surface layer:
0 to 7 inches, dark yellowish brown fine sandy loam

Subsoil:
7 to 13 inches, yellowish brown fine sandy loam
13 to 22 inches, olive yellow sandy loam

Substratum:
22 to 26 inches, firm light olive brown sandy loam
26 to 65 inches, very firm grayish brown fine sandy loam

In the Urban land portion of this complex, the original soil has been covered with impervious surfaces such as asphalt, concrete, and buildings. In many places, the underlying soil has been cut and removed or covered by fill from adjacent areas.

Included with this complex in mapping are small areas of Montauk and Charlton soils in similar landscape positions as the Paxton soils, and Woodbridge soils in drainageways and on benches in the slopes. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderate in the surface layer and subsoil, slow or very slow in the substratum
Available water capacity: moderate

Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Land in this complex is committed to residential and commercial use.

Potential productivity for both eastern white pine and northern red oak is moderate in the Paxton soils in this map unit. Seedling mortality and plant competition are moderate. When vegetative cover is removed on slopes, the soil is susceptible to erosion.

Slope and soil wetness are moderately limiting factors for dwelling construction. Frost action is an additional moderately limiting factor for road construction.

The Paxton soil has severe limitations for septic tank absorption fields, as the restricted permeability in the substratum of this soil prevents the soil from readily absorbing sewage effluent. The Urban soils have varying limitations that require onsite evaluation of their properties.

The Paxton portions of this map unit have good potential for woodland wildlife habitat. The Urban land section of this map unit is not rated for woodland products.

Capability subclass: Paxton–3e; Urban land–none assigned

623C—Woodbridge-Urban land complex, 3 to 15 percent slopes

This rolling complex consists of areas of Urban land and very deep, moderately well drained Woodbridge and similar soils on smooth crests, side slopes, and toeslopes of glaciated hills. The areas are oval or irregular in shape and range 6 to 250 acres in size. These areas are 40 percent Woodbridge soils, 40 percent Urban land, and 20 percent other soils. The Woodbridge soils and Urban land occur in such intricate patterns that it was not practical to separate them at the scale of mapping.

The typical sequence, depth, and composition of the layers of the Woodbridge soils are as follows—

Surface layers:
0 to 2 inches, black moderately decomposed organic material
2 to 4 inches, very dark brown fine sandy loam

Subsoil:
4 to 18 inches, yellowish brown fine sandy loam
18 to 30 inches, yellowish brown fine sandy loam with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

Substratum:
30 to 65 inches, firm light olive brown fine sandy loam, with prominent strong brown and yellowish red masses of iron accumulation and distinct light brownish gray redoximorphic depletions

In the Urban land portion of this complex, the original soil has been covered by structures or impervious surfaces such as asphalt, concrete and buildings. In many places, the underlying soil has been cut and removed or covered by fill from adjacent areas.

Included with this complex in mapping are small areas of Paxton soils on slight rises in the landscape, Ridgebury soils in drainageways, and Scituate soils in similar landscape positions as the Woodbridge soils. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layers, moderate in the subsoil, slow or very slow in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, November-May; perched for brief periods
Hydrologic group: C

Where this complex is mapped, land is committed to residential and commercial use.

The Woodbridge portions of this map unit are well suited for cultivated crops or pasture. The perched high water table may delay planting in spring or harvesting in fall.

Potential productivity is moderate for eastern white pine and high for northern red oak on the Woodbridge portions of this map unit. Plant competition and the hazard of windthrow are moderate management concerns. The seasonal high water table may restrict the selection of plant species and may limit operation of heavy equipment.

Slope and soil wetness are moderate limitations to the Woodbridge soils' suitability for the construction of dwellings without basements. The development of sites for dwellings with basements is severely limited by wetness. The seasonal high water table and frost action pose severe limitations for road construction. The Urban soils parts of this map unit are so varied that onsite investigation is required.

Because of the seasonal high water table and restricted permeability in the substratum, the Woodbridge soil has severe limitations for septic tank absorption fields. Placing distribution lines in a mound of more suitable fill material will help to overcome these limitations. The Urban soils have varying limitations requiring onsite evaluation to determine their properties.

There is good potential for woodland wildlife habitat on the Woodbridge soils. The Urban land section of this map unit is not rated for woodland products.

Capability subclass: Woodbridge–3e; Urban land–none assigned

624B—Haven-Urban land complex, 0 to 8 percent slopes

This undulating complex consists of very deep, well drained Haven and similar soils, and areas of Urban land on broad plains. Individual areas of this unit are rectangular or irregular in shape and range from 6 to 300 acres in size. These areas are 40 percent Haven soils, 40 percent Urban land, and 20 percent other soils. The Haven soils and Urban land occur in such intricate patterns that it was not practical to separate them at the scale of mapping.

The typical sequence, depth, and composition of the layers of the Haven soils are as follows—

Surface layer:
0 to 2 inches, black silt loam

Subsoil:
2 to 20 inches, yellowish brown silt loam
20 to 32 inches, olive yellow very fine sandy loam

Substratum:
32 to 45 inches, olive yellow fine sand
45 to 65 inches, light yellowish brown stratified medium and coarse sand

In the Urban land portion of this complex, the original soil has been covered with impervious surfaces such as asphalt, concrete, and buildings. In many places, the underlying soil has been cut and removed or covered by fill from adjacent areas.

Included with this soil in mapping are small areas of Merrimac soils in similar landscape positions as the Haven soils, Tisbury soils in depressions, and Hinckley soils on knobs and knolls. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer and subsoil, very rapid in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: B

Where this complex is mapped, land is committed to residential and commercial use.

The Haven soil is well suited to lawns, landscaping, and vegetable gardens. Irrigation may not be necessary in years when rainfall is evenly distributed over the growing season.

Potential productivity is high for eastern white pine and is moderate for northern red oak.

The Haven soils have only slight limitations for dwelling construction. Frost action is a moderately limiting factor for local road construction. Building roads on well-compacted, coarse-textured base material will help protect the roads from damage.

The Haven soils have severe limitations for septic tank absorption fields, as these soils readily absorb but may not adequately filter effluent, allowing pollution of ground water.

This Haven portion of this map unit has good potential for woodland wildlife habitat. The Urban land section of this map unit is not rated for woodland products.

Capability subclass: Haven–2e; Urban land–none assigned

626B—Merrimac-Urban land complex, 0 to 8 percent slopes

This undulating complex consists of very deep, somewhat excessively drained Merrimac and similar soils, and areas of Urban land on broad plains. Individual areas of this unit are rectangular or irregular in shape and range from 6 to 1,680 acres. These areas are 40 percent Merrimac soils, 40 percent Urban land, and 20 percent other soils. The Merrimac soils and Urban land occur in such intricate patterns that it was not practical to map them separately.

The typical sequence, depth, and composition of the layers of the Merrimac soils are as follows—
Surface layer:
0 to 9 inches, very dark grayish brown fine sandy loam

Subsoil:
9 to 18 inches, dark yellowish brown gravelly sandy loam
18 to 26 inches, dark yellowish brown very gravelly loamy coarse sand

Substratum:
26 to 33 inches, light yellowish brown very gravelly coarse sand
33 to 65 inches, light olive brown gravelly coarse sand

In the Urban land portion of this complex, the original soil has been covered by structures or impervious surfaces such as asphalt, concrete, and buildings. In many areas, the underlying soil has been cut and removed or covered by fill from adjacent areas.

Included with this soil in mapping are small areas of Sudbury soils in depressions, Hinckley soils on isolated mounds, and Windsor soils in similar landscape positions as the Merrimac soils. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: moderately rapid in the surface layer, moderately rapid or rapid in the subsoil, rapid in the substratum
Available water capacity: moderate
Soil reaction: extremely acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to high water table: more than 6 feet
Hydrologic group: A

Where this complex is mapped, land is committed to residential and commercial use (fig. 21).

The Merrimac soils are well suited to lawns, landscaping, and vegetable gardens. Droughtiness is a management concern. Moderate irrigation is needed during dry periods.

The Merrimac soils have moderate potential productivity for eastern white pine and low potential productivity for northern red oak.

The Merrimac soils have only slight limitations for dwelling or local road construction. However, they have severe limitations for septic tank absorption fields.

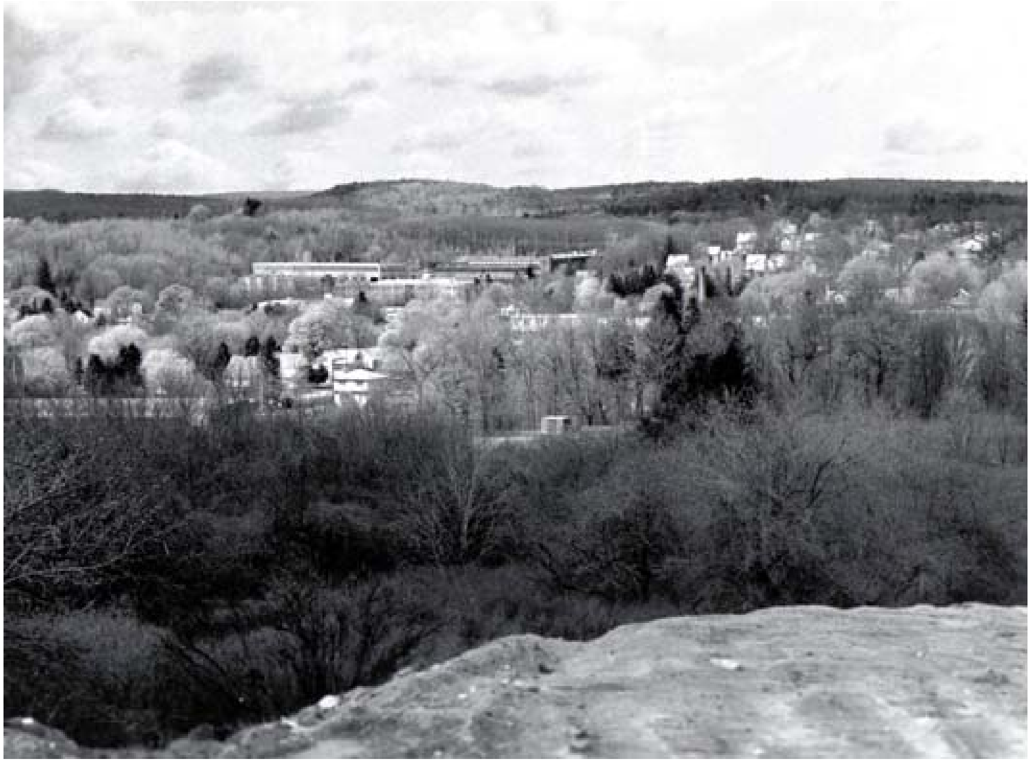

Figure 21.—The area of urban development sits on Urban land and Merrimac-Urban land complex map units. The upland areas in the far background consist of landforms typical of Woodbridge and Paxton soils.

The soils readily absorb but may not adequately filter sewage effluent, which can result in the pollution of ground water. Increased lot sizes or less-dense development can reduce the impact on ground water.

The Merrimac portion of this map unit has fair potential for woodland wildlife habitat.

Capability subclass: Merrimac–2s; Urban land–none assigned

627C—Newport-Urban land complex, 3 to 15 percent slopes

This rolling complex consists of very deep, well drained Newport and similar soils, and areas of Urban land on till plains, low ridges, drumlins and moraines in the Boston Basin. The areas are oval or irregular in shape and range from 6 to 1,200 acres. These areas are 45 percent Newport soils, 40 percent Urban land, and 15 percent other soils. The Newport soils and Urban land are in such intricate patterns that it was not practical to separate them at the scale of mapping.

The typical sequence, depth, and composition of the layers of the Newport soils are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown channery fine sandy loam

Subsoil:
8 to 18 inches, olive brown channery silt loam
18 to 24 inches, olive brown channery sandy loam

Substratum:
24 to 65 inches, firm olive gray channery fine sandy loam

In the Urban land portion of this complex, the original soil has been covered by structures or impervious surfaces such as asphalt, concrete, and buildings. In many places, the underlying soil has been cut and removed or covered by fill from adjacent areas.

Included with this complex in mapping are small areas of Paxton soils in similar landscape positions as the Newport soils, Pittstown soils in low flat areas and depressions, and loamy Udorthents where the Newport soils have been cut away or covered with more than 20 inches of loamy fill material. Minor soils comprise about 15 percent of the map unit.

Major soil properties—

Permeability: moderate or moderately rapid in the surface layer and upper part of the subsoil, slow or very slow in the lower part of the subsoil and in the substratum
Available water capacity: moderate
Soil reaction: very strongly acid to moderately acid
Depth to bedrock: more than 60 inches
Depth to seasonal high water table: 1.5 to 1.8 feet, February-April; perched for brief periods
Hydrologic group: C

Where this complex is mapped, land is committed to residential and commercial use.

The Newport soil is well suited to lawns, landscaping, and vegetable gardens.

Potential productivity for both eastern white pine and northern red oak is high. Plant competition and the hazard of windthrow are moderate management concerns.

Slopes greater than 8 percent and excess subsurface water pose moderate limitations for construction of dwellings with or without basements on the Newport soils. Slope, excess soil wetness, and frost action are moderately limiting factors for road construction. When vegetation is removed on slopes longer than 150 feet, the soil is susceptible to erosion.

The restricted permeability of the Newport soil severely limits its suitability for septic tank absorption fields because of the soil's inability to absorb effluent adequately.

The Newport portions of this map unit have good potential for woodland wildlife habitat.

Capability subclass: Newport–3e; Urban land–none assigned

629C—Canton-Charlton-Urban land complex, 3 to 15 percent slopes

This map unit consists of Urban land and rolling, very deep, well drained Canton and Charlton soils on uplands. Individual areas of this unit are irregular in shape and range from 10 to 480 acres in size. The soils and Urban land in this complex are so intermingled that it was not practical to map them separately. This complex is about 40 percent Canton, 30 percent Charlton, 25 percent Urban land, and 5 percent other soils.

The typical sequence, depth, and composition of the layers of the Canton soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches, dark yellowish brown fine sandy loam

Substratum:
21 to 65 inches, yellowish brown gravelly loamy sand

The typical sequence, depth, and composition of the layers of the Charlton soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In some areas, the surface layer is very fine sandy loam. In the Urban land portion of this complex, the original soil is covered by impervious surfaces such as asphalt, concrete, and buildings. In most cases, the underlying soil has been cut away or covered with fill from surrounding areas of Charlton soils.

Included in this complex in mapping are areas, generally smaller than 6 acres each, of Montauk soils in similar landscape positions as the Canton and Charlton soils; Scituate soils in low, wet areas; and loamy Udorthents where the soils have been cut away or filled with more than 20 inches of loamy fill material. Also included are a few small areas with stones and boulders on the surface. Minor soils comprise about 5 percent of the unit.

Major soil properties—

Permeability: Canton–moderately rapid in the surface layer and subsoil, rapid in the substratum; Charlton–moderate or moderately rapid

Available water capacity: Canton–moderate; Charlton–moderate
Soil reaction: Canton–extremely acid to moderately acid; Charlton–very strongly acid to moderately acid
Depth to bedrock: Canton–more than 60 inches; Charlton–more than 60 inches
Depth to high water table: Canton–more than 6 feet; Charlton–more than 6 feet
Hydrologic group: Canton–B; Charlton–B

Where this complex is mapped, land is committed to residential and commercial use.

The Canton soils are suited and Charlton soils are well suited to the establishment of lawns, landscaping, and vegetable gardens. Proper maintenance includes periodic watering during the dry season, as these soils are somewhat susceptible to drought.

The Canton part of this unit has moderate potential productivity for eastern white pine and low potential productivity for northern red oak. The Charlton soils' potential productivity for both eastern white pine and northern red oak is moderate. The Urban land section of this map unit is not rated for woodland products.

The Canton and Charlton soils have moderate limitations for use as sites for the construction of dwellings or as sites for local roads, due to slope. The Canton soil has severe limitations for septic tank absorption fields, as it readily absorbs but does not adequately filter sewage effluent. The inadequate treatment capacity may result in the pollution of ground water. Low-density development can help to reduce this impact. The Charlton soil has moderate limitations for septic tank absorption fields, due to slope.

Both Canton and Charlton soils have good potential for woodland wildlife habitat.

Capability subclass: Canton–3e; Charlton–3e; Urban land–none assigned

631C—Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky

This nearly level to rolling complex consists of very deep, well drained Charlton soils; areas of Urban land; and shallow, somewhat excessively drained Hollis soils on uplands. Individual areas of this unit are irregular in shape and range from 10 to 700 acres in size. The soils and Urban land in this complex are so intermingled that it was not practical to map them separately. This complex is about 40 percent Charlton soils, 40 percent Urban land, 10 percent Hollis soils, and 10 percent other soils. Up to 2 percent of the surface is bedrock outcrop.

The typical sequence, depth, and composition of the layers of the Charlton soil are as follows—

Surface layer:
0 to 5 inches, dark brown fine sandy loam

Subsoil:
5 to 22 inches, yellowish brown sandy loam

Substratum:
22 to 32 inches, grayish brown gravelly sandy loam
32 to 65 inches, firm grayish brown gravelly sandy loam

In the northeastern part of the county, the substratum is typically friable gravelly or very gravelly loam sand. In some areas, the subsoil is redder.

The typical sequence, depth, and composition of the layers of the Hollis soil are as follows—

Surface layer:
0 to 2 inches, black fine sandy loam

Subsoil:
2 to 14 inches, dark yellowish brown fine sandy loam

Bedrock:
14 inches

Some areas have a substratum of pale yellow fine sandy loam. The bedrock may be granite, gneiss, schist, phyllite, or conglomerate.

In the Urban land portion of this complex, the original soil is covered by impervious surfaces such as asphalt, concrete, and buildings. In most cases, the underlying soil has been cut away or covered by fill from surrounding areas of Charlton soils.

Included in this complex in mapping are rock outcrops and areas, generally smaller than 6 acres each, of Canton and Montauk soils at higher elevations; Scituate soils in low, wet areas; and loamy Udorthents where the original soil has been removed, replaced, or covered with more than 20 inches of loamy fill material. Included areas comprise 10 percent of the unit.

Major soil properties—

Permeability: Charlton–moderate or moderately rapid; Hollis–moderate or moderately rapid
Available water capacity: Charlton–moderate; Hollis–very low
Soil reaction: Charlton–very strongly acid to moderately acid; Hollis–very strongly acid to moderately acid
Depth to bedrock: Charlton–more than 60 inches; Hollis–10 to 20 inches
Depth to high water table: Charlton–more than 6 feet; Hollis–more than 6 feet
Hydrologic group: Charlton–B; Hollis–D

Where this complex is mapped, the land is committed to residential or commercial uses.

The Hollis soils are poorly suited and Charlton soils are well suited to the establishment of lawns, landscaping, and vegetable gardens. Proper maintenance includes periodic watering during the dry season.

The Charlton soils in this map unit have moderate potential productivity for eastern white pine while the Hollis soils have low potential productivity for this species. Charlton has moderate potential productivity for northern red oak, while the Hollis soils have low potential productivity. The Urban land section of this map unit is not rated for woodland products.

Charlton soils have moderate limitations for the construction of dwellings. In areas of Hollis soils, filling or blasting is necessary for installation of deep foundations.

Areas of Hollis soils have severe limitations for septic tank absorption fields because of the soils' shallow depth to bedrock (fig. 22). Adjacent areas of Charlton soils have moderate limitations for septic tank absorption fields because of their slopes, but onsite investigation is necessary to locate these spots.

The Charlton soils have good potential for woodland wildlife habitat, but the Hollis soils have poor potential for the same.

Capability subclass: Charlton–3e; Urban land–none assigned; Hollis–6s

652—Udorthents, refuse substratum

This unit consists of areas that have been used for solid waste disposal (landfills and dumps). They are typically constructed from alternating layers, several inches to several feet thick, of refuse and soil material. These map units take the form of high mounds, often rising abruptly from the surrounding landscape, and range in size from 6 to 100 acres. Slopes of the tops are predominantly 2 to 8 percent, and side slopes 15 to 35 percent, commonly following the perimeter of the map units.

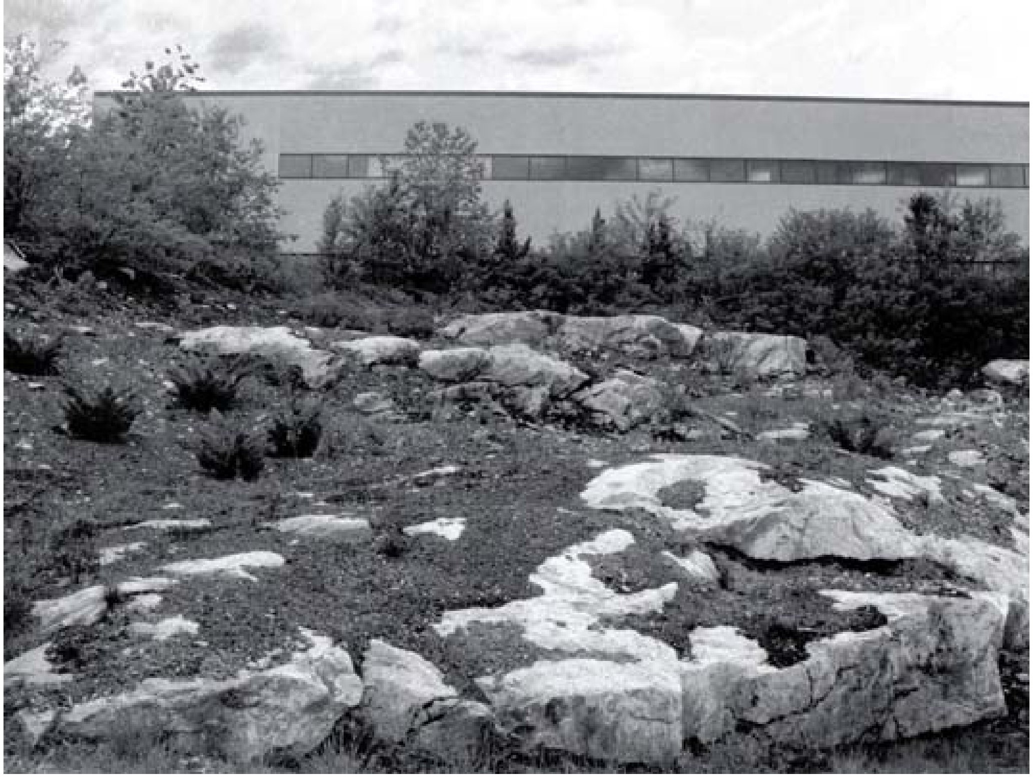

Figure 22.—An area of the map unit Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky.

Where these areas were constructed prior to 1971, they consisted almost entirely of refuse and burned refuse, many feet deep, with a cover of 1 or more feet of loamy soil material planted with grasses. The refuse consisted of partially decomposed or burned paper, plastic, metal, glass, rubble, cinders, and organic debris. Landfills constructed after 1971 consist of alternating layers of loamy and sandy soil material, unburned and incinerated refuse, and sewage sludge. Abandoned landfills typically have a covering of 2 to 4 feet of loamy soil material, sometimes mixed with sewage sludge, graded to 2 percent slopes on the top, and planted with grasses. In active landfills about 6 inches of sandy soil is placed over the refuse daily and compacted. In many places, refuse protrudes through the surface.

Included with this unit in mapping are areas of Udorthents, loamy; Pits, gravel; and Udorthents, sandy in adjacent pits where soil has been removed for daily cover and there is no underlying refuse. Udorthents, wet substratum soils lie where swamps, marshes, and flood plains have been filled. Minor soils comprise about 20 percent of the mapped acreage.

Water tends to pond on the surface of highly compacted areas, particularly on nearly level areas with their final cover of loamy soil. An odor of sulfide gas can be detected when excavations are made in this unit. An orange-colored leachate sometimes seeps out at the base of slopes.

Areas of this map unit that are not presently being used for refuse disposal are idle or are used for playing fields. Some areas have been reclaimed and used for building sites.

This map unit can be subject to subsidence. In addition, dangerous gases can be emitted from the substratum and accumulate inside buildings.

Soil conditions are so variable that detailed onsite investigation is needed to assess suitability for specific land uses.

Capability subclass: none assigned

653—Udorthents, sandy

This map unit consists of nearly level to rolling areas where the original soil has been removed for use as road fill, concrete aggregate, or landfill cover, or has been leveled for development. The original soils were typically excessively drained to well drained, and are found on glacial outwash plains, terraces, kames, and eskers. The areas are irregular in shape and range from 6 to 230 acres in size. Slopes are complex but are predominantly 0 to 5 percent at the base of cut-out areas, with side slopes of 8 to 35 percent following the perimeter of the unit.

Typically, these areas are the remaining substratum material from Canton, Hinckley, Merrimac, and Windsor soils, the upper 4 to 40 feet having been removed. They are predominantly stratified sand and gravel to a depth of 60 inches or more. Many areas have stones and boulders scattered randomly on the surface or in piles. Where heavy machinery has made continuous passes over the same area, the surface is firm and compact. A few areas have a thin brown or dark brown surface layer of sandy loam or loamy sand.

Included with this unit in mapping are small areas of Udorthents, loamy soils, and Urban land. Also included are some low areas and depressions with a seasonally high water table. Minor soils comprise about 15 percent of the mapped acreage.

Many areas of this unit are used for athletic fields and playgrounds. Some areas of this complex are idle, with scrubby vegetation that commonly includes poverty grass, sweet fern, gray birch, poplar, and eastern red cedar.

This map unit is so variable that onsite investigation is needed to assess its potential for specific land uses.

Capability subclass: none assigned

654—Udorthents, loamy

This map unit consists of nearly level and rolling areas where the original soil has been cut away or covered with a loamy fill material. Most of these areas have been graded to a smooth surface with 4 to 10 inches of topsoil, and range in size from 6 to 110 acres. This soil commonly occupies upland areas, but is in a variety of landscape positions. Slopes are smooth or irregular and range from 0 to 25 percent, but are predominantly 0 to 5 percent.

Where the original soil has been cut away, the exposed surface is typically composed of substrata of Bernardston, Charlton, Newport, Paxton, Pittstown, or Woodbridge soils.

Filled areas may have received material from several sources or from a single adjacent cut. In many areas, the fill is compact and firm when dry. The majority of these areas have grass vegetation. Some areas on slopes of 15 to 25 percent lack vegetative cover because of erosion and slope instability.

Included with this soil in mapping are areas, generally smaller than 6 acres each, of Urban land; Udorthents, sandy soils; and Udorthents, wet substratum soils bordering existing wetlands. Minor soils comprise about 20 percent of the unit.

Most areas of this map unit are used for parks, recreation fields (fig. 23), and buildings. Buried objects and layers that restrict permeability may hinder deep excavations. Soil tests should be performed to identify possible contaminants such as heavy metals, which may be present. Soil characteristics are variable with depth, requiring extensive onsite investigation before potential for specific land uses can be evaluated.

Capability subclass: none assigned

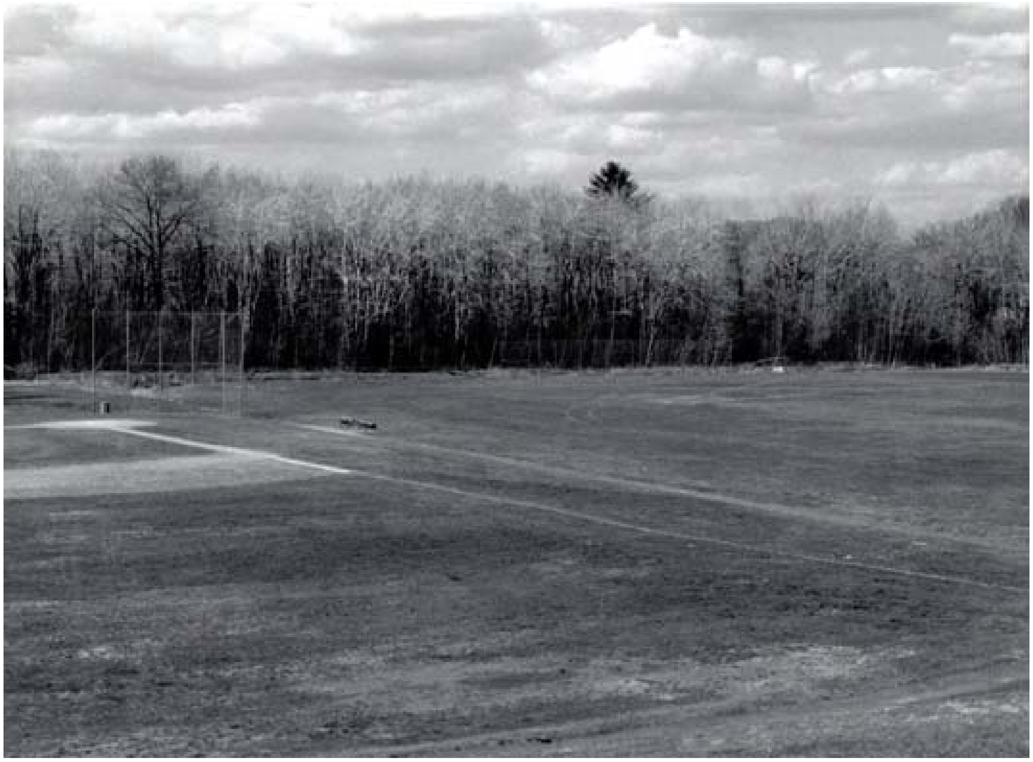

Figure 23.—Areas mapped as Udorthents are often sites which have been filled and smoothed for use as athletic fields. This area is part of a unit of Udorthents, wet substratum. The soil in the wooded area is Swansea muck.

655—Udorthents, wet substratum

This map unit consists of nearly level to hilly areas of poorly drained and very poorly drained soils that have been filled in with various types of soil material, rubble and refuse. Depth of the fill material ranges from 2 to 20 feet or more. Areas of this unit are irregular in shape and range in size from 6 to 150 acres. The areas were typically flood plains, meadows, and swamps that were filled for various urban land use purposes. This unit is most extensively mapped in the urbanized areas of the eastern part of the county and adjacent to the Charles and Mystic Rivers. Scattered small areas of this unit are mapped throughout the survey area.

Included with this soil in mapping are areas generally smaller than 6 acres each of Urban land, Swansea, and Freetown soils. Minor soils comprise about 15 percent of this unit.

Runoff varies and water tends to pond on the surface in some areas after heavy rainfall.

Most areas of this map unit are used for buildings, though a few are used for recreation fields. Extensive investigation is required to assess the suitability of these areas for building site development. Pilings are typically required in the construction of foundations. Individual areas should be tested for the presence of toxins such as heavy metals.

Capability subclass: none assigned

656—Udorthents-Urban land complex

This nearly level to hilly complex consists of Udorthents and areas of Urban land. Individual areas of this unit are rectangular or irregular in shape and range from 6 to

1,020 acres in size. This complex is about 40 percent Udorthents, 40 percent Urban land, and 20 percent minor soils. The Udorthents and Urban land lie in such intricate patterns that it was not practical to separate them at the scale of mapping.

In the Urban land portion of this complex, the original soil has been partially removed or filled with sandy or loamy soil material and covered with impervious surfaces such as asphalt, concrete, and buildings.

Included with this soil in mapping are small areas of somewhat excessively drained Merrimac soils and well drained Canton and Paxton soils. Minor soils comprise about 20 percent of the map unit.

Major soil properties—

Permeability: variable
Available water capacity: variable

Where this complex is mapped, land is committed to residential and commercial use. The Udorthents have widely varying soil properties. Onsite investigation is recommended to assess the land's potential for specific uses.

Capability subclass: none assigned

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to produce sustained high yields of crops economically when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and either is not frequently flooded during the growing season or is protected from flooding. Slopes range mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 62,178 acres in the survey area, or nearly 12 percent of the total acreage, meets the requirements for designating the soil as 'prime farmland'. Scattered areas of this land are throughout the county, but most are in the southern part. About 19,000 acres of this prime farmland is used for crops. The crops grown on this land, mainly corn and soybeans, account for an estimated two-thirds of the county's total agricultural income each year.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, less productive, and not easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. By referring to the land capability subclass, the user can determine which condition is considered most limiting for that soil. The extent of each listed map unit is shown in table 4, and the locations are shown on the detailed soil maps. The user can also refer to the section titled "Detailed Soil Map Units," where the soil qualities affecting use and management are described more fully.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land use to be in accordance with the limitations and potentials of natural resources and the environment. Also, it can help projects avoid soil-related failures resulting from using the land in ways for which the soils are not suitable.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors affecting various soil uses and management. Field experience and collected data on soil properties and performance are used as bases for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; for woodland; as sites for buildings, sanitary facilities, and local streets and roads; as sites for parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use, or in terms which indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *slight, moderate, severe*, or *low, moderate,* and *high*. The suitability ratings are expressed as *good, fair, poor*, and *very poor*, as *probable* or *improbable*, and as *favorable* or *not suited*. Potential of soils as they are in an undrained state and uncleared of stones, is expressed as *good, moderate*, or *poor*. Soil conditions are described as *favorable*, or the limiting conditions are described.

Crops and Pasture

Robert N. Morehouse, former District Conservationist, helped to write this section.

In 1945, there were 4,600 farms, which operated on about 210,000 acres of farmland in Middlesex County. Since then, there has been a continuous decline in the number of farms. In 1997, there were 693 farms producing over $1,000 worth of agricultural products. Of the 34,991 acres of farmland, about 17,770 acres were in cropland, 7,700 in hay and silage, and 2,390 in grazing and pasture land. The remaining acreage was in woods, farmsteads, ponds, roads, etc. By 2002, the number of farms was 579 (USDA, NASS, 2002).

The chief agricultural operations in Middlesex County include: nursery and greenhouse production, vegetables, livestock, fruit and berries, and dairy (fig. 24). About 4,460 acres of land are used to produce fruits and berries for the fresh market, with the most acreage being devoted to sweet corn, pumpkins, squash, tomatoes, bell peppers, lettuce, and snap beans. The most common orchard crop for processing and the fresh market is apples. Nursery and greenhouse enterprises generate the highest gross income (USDA, NASS, 2002). In the fall, most of the cropland in the county is planted to winter cover crops.

Sheet and rill erosion are concerns on sloping cropland that is under continuous tillage. Contour cropping is practiced on many sloping fields to reduce erosion. Stripcropping, terracing or conservation tillage have not been widely used in the county because fields are small and irregular.

In addition to slope, other soil properties that limit crop production include stoniness, seasonal high water tables, lack of available moisture, low natural fertility and high soil acidity. Many miles of subsurface drainage have been installed to lower water tables. Sprinkler irrigation systems that draw water from excavated ponds are commonly used for vegetables, strawberries, and nursery crops. Most essential

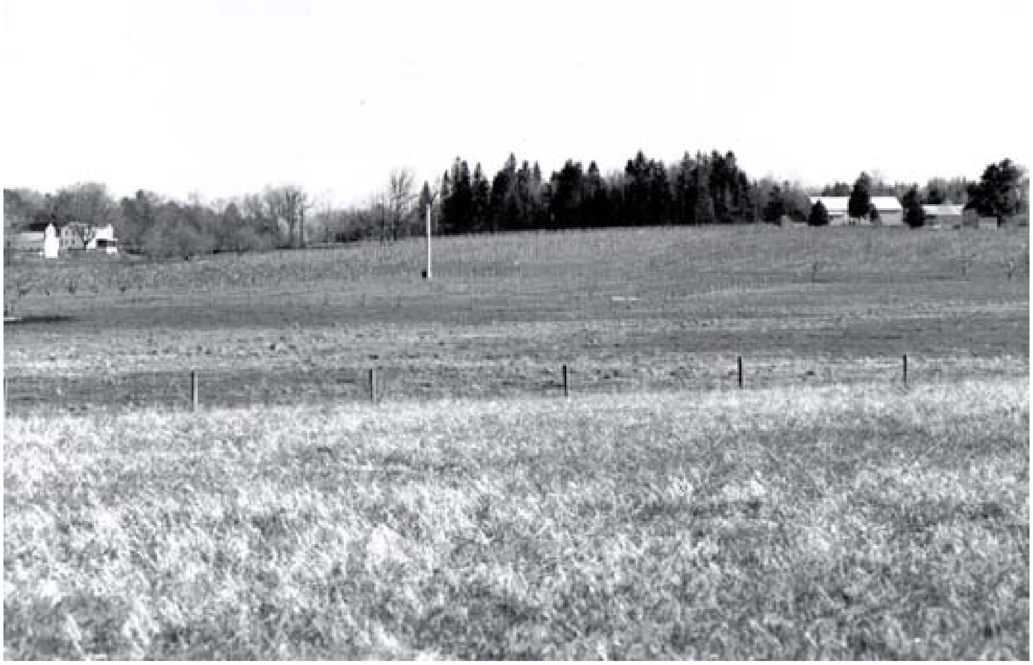

Figure 24.—Certain soils are better suited for some land uses than for others. In the foreground, Ridgebury soils are used for hay production. In the center are Whitman soils, used for pasture. In the background, Woodbridge and Paxton soils support orchards.

nutrients are supplied by annual application of manure and chemical fertilizers. Applications of ground limestone are also made as needed, to control soil acidity.

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed; the system of land capability classification used by the Natural Resources Conservation Service is explained; and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Yields per Acre

The average yields per acre that can be expected of given crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yield estimates are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered. The estimates reflect the productive capacity of each soil for each of the given crops, under non-irrigated conditions. Yields are likely to increase as new production technology is developed. The relative productivity of a given soil in comparison with that of another soil, however, is not likely to change. A soil may be rated as being *well suited, suited,* or *poorly suited* to a particular crop, to hay, or to pasture, in the detailed soil map units.

The table lists yields in units that relate to each crop. For sweet corn, silage corn, and grass or legume hay, the yields are measured in tons per acre. A yield of below 4 tons of corn per acre may be considered a poor yield for sweet corn. A yield of between 4 and 5 tons per acre is fair, and above that is a good yield. For silage corn, a yield of over 22 tons per acre may be considered good. A yield of between 16 and 22 tons is fair. Fewer than 16 tons per acre may be considered a rather poor yield. For grass-legume hay, a yield of below 2.5 tons per acre is poor, between 2.5 and 3.5 tons per acre, fair, and above that, good. For grass-hay, a yield of over 3.5 tons per acre is a good yield, and below 2.5 tons per acre is a poor yield.

Yields for grass-clover are measured in animal-unit months, or AUMs. One AUM represents the amount of forage needed to support one cow or horse, or 5 sheep or 5 goats, for 30 days. A capacity of below 4 AUMs should be considered as indicating a poor yield of grass-clover. A capacity of between 4 to 6 AUMs is fair, and any number of AUMs above that may be considered as a good yield.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control and protection from flooding; proper planting and seeding rates; use of suitable, high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; maintenance of optimum levels of acidity, nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss of crop material.

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive land forming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at two levels: capability class and subclass.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have few limitations which restrict their use.

Class 2 soils have moderate limitations which restrict the choice of plants or which require moderate conservation practices.

Class 3 soils have severe limitations which restrict the choice of plants or which require special conservation practices, or both.

Class 4 soils have very severe limitations which reduce the choice of plants or which require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, which restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations which make them generally unsuitable for cultivation and which restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations which make them unsuitable for cultivation and which restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations which nearly preclude their use for commercial plant production and which basically restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main limitation is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

Class 1 has no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The acreage of soils in each capability class or subclass is shown in table 6. The capability classification of map unit components in this survey area is given in the section “Detailed Soil Map Units” and in table 6.

Woodland Management and Productivity

Table 7 can help woodland owners or managers plan the use of soils for wood crops. It shows the potential productivity of the soils for wood crops and rates the soils according to the limitations that affect various aspects of woodland management.

The paragraphs that follow indicate the soil properties considered in rating the soils for woodland management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual", which is available in local offices of the Natural Resources Conservation Service, or on the Internet.

Management Concerns

Interpretive rating terms are given for various aspects of woodland management. The terms indicate the degree to which the soils are limited for a specified practice. *Slight* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderate* indicates that the soil has features that are moderately limiting for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Severe* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well-managed woodland during logging and road construction. The ratings are based on slope, flooding, ponding, content of sand, the Unified classification, quantity of rock fragments on or below the surface, depth to a restrictive layer, and depth to a water table. The risk is *slight* if the expected soil loss is small, *moderate,* if measures are needed to control erosion during logging and road construction, and *severe*, if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. The ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate*, indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe*, indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Ratings in the column *seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. Where the terms *slight, moderate,* and *severe* are used, the ratings indicate gradations between the point at which the potential for seedling mortality is highest and the point at which the potential is lowest. A rating of *slight* indicates that the expected mortality is less than 25 percent; *moderate*, 25 to 50 percent; and *severe,* more than 50 percent. Plant competition is not considered in the ratings, which apply to seedlings from good stock that are properly planted in a period of sufficient rainfall.

Ratings of *windthrow hazard* are based on soil characteristics that affect the development of tree roots and the ability of the soil to hold trees firmly. The ratings are based on depth to a water table, depth to a restrictive layer, and quantity of rock fragments on or below the surface. A rating of *slight* indicates that few trees may be blown down by strong winds; *moderate,* that some trees will be blown down during periods of excessive soil wetness and strong winds; and *severe*, that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

Plant competition ratings indicate the degree to which undesirable plants are expected to invade where there are openings in the tree canopy. The invading plants compete with native plants or planted seedlings. The ratings are based on soil drainage classes, high available water, and pH. A rating of *slight* indicates little or no competition from other plants; *moderate*, indicates that plant competition is expected to hinder the development of a fully stocked stand of desirable trees; *severe*, indicates that plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed to control undesirable plants.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. In Middlesex County, the range extends from 35 (green ash on Freetown soils) to 93 (tulip tree on Broadbrook soils). Commonly-grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding the site index is available in the National Forestry Manual, which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber* number indicates the yields likely to be produced by the most important tree species which will grow on a specific soil. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), estimates the amount of fiber produced yearly in a fully-stocked, even-aged, unmanaged stand. For Middlesex County, an average annual yield of conifer fiber of 63-89 cubic feet/acre is relatively low production volume, 90-116 ft^3/acre is moderate volume, and 117-143 ft^3/acre is relatively high production volume. An average annual yield of hardwood fiber of 29-38 cubic feet/acre is relatively low production volume, 39-48 ft^3/acre is moderate volume, and 49-58 ft^3/acre is relatively high production volume.

Suggested Trees to Plant are those which are preferred for planting, seeding, or natural regeneration and those which remain in the stand after thinning or partial harvest.

Recreational Development

Middlesex County is the most populous county in the state, with a high demand for and use of recreational land. Numerous publicly-owned parks and unique historical and cultural resources provide a wide range of recreational opportunities in the county. There is a rich heritage of Colonial and Revolutionary War period architecture, and there are many old town and village centers with traditional New England town commons.

More than 280 lakes and ponds, in addition to miles of streams, provide places for swimming, boating, and fishing. Trout fishing is restricted to several deep lakes and the better-quality streams, particularly those in the northwestern part of the county.

There are about 19,000 acres of state- and federally-owned land in the county which are available for public use. Some of the more noteworthy areas include the Middlesex Fells Reservation in the eastern part of the county; Great Meadows National Wildlife Refuge, and the Minuteman National Historic Park in the central part; Hopkinton State Park in the southern part; and Willard Brook State Park in the northwestern part. These areas are used for sightseeing, canoeing, hunting, camping, hiking, picnicking, and nature study, among other things. In addition, almost every town in the county has a significant amount of land set aside for recreation, open space, or conservation. Horseback riding is popular throughout the area; miles of bridle paths are found mostly on private land.

The soils of the survey area are rated in table 8 according to the limitations which affect their suitability for recreational development. Rating class terms indicate the extent to which a soil is limited by all of the soil features which affect the recreational uses. *Slight* indicates that the soil has features that are favorable for the specified use.

The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderate* indicates that the soil has features which are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Severe* indicates that the soil has one or more features which are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected. If the soil is likely to vary so much that onsite investigations are needed to determine suitable locations for the specified land use, the map unit is not rated.

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils which are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in table 8 can be supplemented by other information in this survey. For example, tables with interpretations for building site development, construction materials, sanitary facilities, and water management can also be consulted.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties which affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or an impervious layer are the main concerns affecting the development of camp areas.

The soil properties which affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily-used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties which influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties which affect the growth of plants are depth to bedrock or a cemented pan, permeability, and presence of toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and presence of large stones. The soil properties which affect the growth of plants are depth to bedrock or a cemented pan, permeability, and the presence of toxic substances in the soil.

Playgrounds require soils which are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties which influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties which affect the growth of plants are depth to bedrock or a cemented pan, permeability, and the presence of toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are degree of soil reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties which affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Middlesex County has a diverse wildlife habitat. Mammals such as fox, muskrat, weasels, and mink can be found in the less-urbanized western and northern parts of the county. Populations of otter and beaver have recently become more abundant, and are found along streams and rivers in central and western areas. Fisher have been seen occasionally in Ashby and Townsend. White-tailed deer and coyotes live throughout rural and suburban areas, with particularly high populations in communities which have no-hunting laws. Cottontail rabbit, gray and red squirrels, chipmunks, and various voles, mice, and bats are plentiful. Raccoon, skunk, and opossum are common and have become a nuisance in some locations.

Red-tailed and broad-winged hawks are common in season. Grouse, pheasant, woodcock, and a great variety of songbirds abound throughout the county. Great blue heron, pileated woodpeckers, and wild turkeys are occasionally seen.

The most common reptiles include garter and black snakes, and snapping, painted, and spotted turtles. Red-backed salamanders are common under rotting logs. Spotted salamander populations have been declining, and blue-spotted salamanders are considered rare.

Urban areas support a variety of small mammals, birds, and rodents. Domestic and feral dogs and cats abound, and they and vehicles take a considerable toll on wildlife.

An extensive system of parks and conservation land, supported by the national, state, and local governments, as well as several private land trusts, provides habitat protection that is found across most of the county. Several large farms and numerous ‘mini-farms’ provide valuable field border habitat. Most of the existing wetlands are preserved by state and local regulation. In 1988, the Massachusetts Wetland Protection Regulations were amended to include conservation for wildlife habitat, especially endangered species habitat. The county’s largest single land holding committed to wildlife is the Great Meadows National Wildlife Refuge, which covers about 2,500 acres of land along the Concord and Sudbury rivers. This refuge abuts a large State Fish and Game area along Pantry Brook and additional town-owned conservation land.

Fish and some amphibians spend their entire life cycles in water, while several other amphibians can successfully reproduce only in vernal pools. All of these animals are sensitive to the effects of acid precipitation. Because of their extremely low buffering capacity, vernal pools are particularly vulnerable to acidification. The ability of a pond to buffer the effects of acidification is measured by its dissolved alkalinity, which is determined largely by the chemical composition of the soils and underlying bedrock throughout the watershed. Most of the larger ponds in the survey area are sensitive to acid precipitation, but are not endangered by it.

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 9, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils which are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated *good, fair, poor,* or *very poor*. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features which affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features which affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features which affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama grass.

Hardwood trees and woody understory plants produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features which affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, and hickory. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are red osier dogwood, highbush blueberry, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wild rice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for open land wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas includes bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas includes wild turkey, ruffed grouse, woodcock, thrush, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas (fig. 25). Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the “Soil Properties” section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 6 feet. Because of the field mapping scale, small areas of different soils, up to 5 acres in size, may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning and designing a project, and in selecting a site.

Figure 25.—Areas of Freetown muck, ponded, provide habitat for many wildlife species.

Soil properties, site features, and observed performance of the soils were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthen fill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 10 shows the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are verbal. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Slight* indicates that soil properties and site features are generally favorable for the specified use, and limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderate* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Severe* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected. Special feasibility studies may be required where all the soil limitations are severe. If the soil is likely to vary so much that onsite investigations are needed to determine suitable locations for the specified land use, the map unit is not rated.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing or caving. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing and caving.

Dwellings are defined here as single-family houses of three stories or less. For *dwellings without basements*, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For *dwellings with basements*, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures which are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties which affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). Properties affecting the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a sub-grade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime, cement, or some other means; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. Cuts and fills are generally limited to less than 6 feet. The ratings are based on site features and on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties which affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number in the Engineering Index Properties table), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. Properties affecting plant growth are soil reaction; depth to a water table; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. Properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 11 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoon areas, sanitary landfills, and daily cover for landfill. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Slight* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. *Moderate* indicates that the soil has properties which are less favorable for the indicated use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Severe* indicates that the soil has one or more properties that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected. If the soil is likely to vary so much that onsite investigations are needed to determine suitable locations for the specified land use, the map unit is not rated.

In this county, the soil's suitability as a source of material for daily covering for landfills is rated *fair* or *poor*. *Good* would indicate that soil properties and site features are favorable for this use. *Fair* indicates that soil properties and site features are moderately favorable for this use, but that one or more properties or site features make the soil less desirable than a soil that might be rated *good*. *Poor* indicates that one or more soil properties or site features are unfavorable for this use, and overcoming the properties requires special design, extra maintenance, or costly alteration of the site. *Limitation: variable* implies that soil conditions are so varied that onsite investigation is required to determine whether or not there is suitable material. The ratings also apply to the final cover for a landfill.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and about 65 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas. Unsatisfactory performance of septic tank absorption fields, including excessively-slow absorption of effluent, hillside seepage, and surfacing of effluent, can affect public health. Ground water may become contaminated if the slope is excessive, if highly-permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, or if the water table is near the surface. There must be sufficient unsaturated soil material beneath the absorption field to filter the effluent effectively, particularly when the system is new. Many local ordinances require that this material be of a certain thickness.

Sewage lagoon areas are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. They should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material is required for the lagoon floor and sides to minimize seepage and contamination of ground water. The surface layer, and generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The table gives ratings for the natural soil that makes up the lagoon floor. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Permeability is a critical property affecting the soil’s suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill: trench and area. In a *trench sanitary landfill*, solid waste is placed successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on site features and soil properties that affect the risk of pollution, ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, flooding, slope, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated *slight* or *moderate* may not be valid, and onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill, as well as affecting the construction and performance of roads in areas of the landfill. Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact, and are difficult to place with uniform thickness over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, ponding, permeability, depth to a water table, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution of areas downstream from the landfill. If soil permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow to the surface of the soils in steeper areas and cause seepage problems that may be difficult to resolve.

Both types of landfill must be able to bear heavy vehicular traffic, and both involve a risk of ground water pollution.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in a sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium and lime.

Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils may be sticky or cloddy and difficult to spread; sandy soils are subject to wind erosion. Slope affects the ease of excavation and of moving the cover material, and can influence runoff, erosion, and ease of reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area should be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime, and should not be too acid.

Construction Materials

Table 12 gives information about the soils as potential sources of gravel, sand, topsoil, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil and roadfill. The features that limit the soils as sources of these materials are specified in the tables. If the soil is likely to vary so much that onsite investigations are needed to determine suitable locations for the specified land use, the map unit is not rated.

Soils are rated as *probable* or *improbable* sources of sand and gravel. A rating of *probable* means that the source material is likely to be found in or below the soil.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. Sands and gravels are used in many kinds of construction, and specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source, regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum necessary thickness. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

A soil rated as a probable source has a layer of clean sand or gravel, or a layer of sand or gravel that has less than 12 percent silt- and clay-sized particles. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as improbable sources.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil are evaluated for use as topsoil. Ratings are based on the soil properties that affect plant growth, and the ease of excavating, loading, and spreading the material. Toxic substances, soil reaction or pH, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Soils rated *good* as sources of topsoil have friable loamy material to a depth of at least 40 inches. The soils are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult. Soils rated *fair* are sandy soils, loamy soils with a relatively high content of clay, soils with only 20 to 40 inches of suitable material, soils with an appreciable amount of gravel, stones, or soluble salts, or soils with slopes of 8 to 15 percent. Again, the soils should not be so wet that excavation is difficult. Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high, and less exacting in design than higher embankments. The ratings are for the whole soil, from the surface to a depth of about 65 inches. It is assumed that soil layers will be mixed when the soil material is excavated and spread. As many soils have layers of contrasting suitability within their profiles, the user is urged to consult the table showing engineering index properties, with detailed information about each soil layer.

The ratings are based on the amount of suitable material and on soil properties affecting the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. Ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Soils rated *good* for sources of roadfill contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Water Management

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance would be needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance would be required.

This table also gives for each soil the limitations or restrictive features of each soil as they affect drainage, irrigation, terraces and diversions, and grassed waterways. If there are no particular limitations to the use of a soil for one of the purposes listed in the table, it is rated as having *favorable* suitability. If the soils are likely to vary so much that onsite investigation is needed to determine suitable locations for the specified purpose, that map unit is not rated.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction. However, the ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion, and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material, and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material as well as the ability of the area to withstand the impact of traffic.

Aquifer-fed excavated ponds are pits or dugouts which extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff, and embankment ponds which impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, a cemented pan, or other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditch banks are affected by depth to bedrock or a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil once it is drained is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, or sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and the degree of soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse soil texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or a cemented pan affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Properties

Table 14 gives the engineering classifications and the range of index properties for the major layers of each soil in the survey area. Most soils have layers of varying properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under ‘Soil Series and their Morphology.’

USDA Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier, such as “gravelly”, is added. Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1985) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1982).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse-grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine-grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock *fragments* larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage (of soil particles) passing designated sieves*is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 15 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller. This table displays clay content as a percent.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. *Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. *Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The amount and kind of clay greatly affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability and *Saturated hydraulic conductivity* refer to the ability of a soil to transmit water or air. The term ‘permeability’, as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of downward movement of water through a unit area of saturated soil in inches per hour and micrometers per second (K_{sat}), under a unit of hydraulic gradient (water under pressure, moving downward). The range of rates of permeability and saturated hydraulic conductivity for each soil layer are shown. Rates range from 0 to 100 inches per hour for permeability, and from 0 to 705 micrometers per second for saturated hydraulic conductivity. The estimates are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction projects where the movement of water under saturated conditions would affect the behavior of the installation.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time. This soil survey estimates available water capacity to a depth of 40 inches.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 15, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive affect on available water capacity, water infiltration rate, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 15 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. Areas with a high degree of variability, such as Udorthents, are not rated. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.

2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material, except Folists. Also very fine sandy loam and silt loam with 5 or less percent clay and 25 or less percent very fine sand.

3. Coarse sandy loams, sandy loams, fine sandy loams, very fine sandy loams, and noncalcareous silt loams that have 20 to 50 percent very fine sand and 5 to 12 percent clay.

4. Clays, silty clays, and noncalcareous clay loams and noncalcareous silty clay loams that have more than 35 percent clay. None of these have a high content of iron oxide.

4L. Calcareous loams, calcareous silt loams, calcareous silt, calcareous silty clay loams, calcareous clay loams, calcareous sandy clay loams, and calcareous sandy clays.

5. Noncalcareous loams that have less than 20 percent clay, noncalcareous silt loams that have 12 to 20 percent clay, noncalcareous sandy clay loams, noncalcareous sandy clays, and hemic soil material as defined in Soil Taxonomy.

6. Noncalcareous loams and silt loams that are more than 20 percent clay, noncalcareous clay loams and noncalcareous silty clay loams that have less than 35 percent clay, and silt loam with a high iron oxide content.

7. Noncalcareous silts; noncalcareous silty clays, noncalcareous silty clay loams, and noncalcareous clays with a high content of iron oxide; and fibric soil material as defined in Soil Taxonomy.

8. Soils that are not subject to wind erosion because of wetness or coarse fragments at the surface. This includes soils that are stony or bouldery, poorly or very poorly drained, or are paved.

Soils with gravelly, very gravelly, or extremely gravelly textures are reduced by one, two, or three Wind Erodibility Index groups, respectively.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion. The range of soil loss in tons per acre per year ranges from 310 tons for very fine sands, to 0 tons for ponded, stony, bouldery, or impermeable areas.

Chemical Properties

Table 16 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area.

The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Soil Features

Table 17 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heaving and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the texture, sulfate and sodium content, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Water Features

Table 18 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 18 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or redoximorphic features, in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 18 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Hydric Soils

In this section, hydric soils are defined and described. They are listed in table 19.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; Environmental Laboratory; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, if not artificially drained, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (USDA, 1975 and 1999), “Keys to Soil Taxonomy” (USDA, 1975, 1992, and 1994), and in the “Soil Survey Manual” (USDA, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1996).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1996).

Map units that are made up of hydric soils may have small included areas of nonhydric soils on the higher positions of the landform, and map units made up of nonhydric soils may have included areas of hydric soils in lower positions on the landform.

The table names each component and minor soil of the map unit, listing whether or not that component or minor soil is hydric, and what kind of landform the soil is found on. The alphanumeric and numeric symbols for the criteria that cause the soil to be described as hydric are listed.

The publication “Field Indicators of Hydric Soils of the United States” (Hurt and others, 1996), defines the criteria for hydric soils. The criteria which would result in a soil being classified as hydric are as follows:

1. All Histosols except Folists (see Table 20.—Taxonomic Classification of the Soils), or
2. Saturated soils, which fall in the Aquic suborder, Aquic subgroup, Albolls suborder, Salorthids great group, Pell great group of Vertisols, Pachic subgroup, or Cumulic subgroups that:
    - A. are somewhat poorly drained and have a frequently-occurring water table less than 0.5 feet from the surface for a significant period (usually 14 consecutive days or more) during the growing season, or
    - B. are poorly drained or very poorly drained and have either:
        - 1) a frequently-occurring water table less than 0.5 feet from the surface for a significant period (usually 14 consecutive days or more) during the growing season, if soil textures are coarse sand, sand, or fine sand in all layers within 20 inches of the surface, or for other soils,
        - 2) a frequently-occurring water table less than 1.0 feet from the surface for a significant period (usually 15 consecutive days or more) during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within 20 inches, or
        - 3) a frequently-occurring water table less than 1.5 feet from the surface for a significant period (usually 14 consecutive days or more) during the growing season if permeability is less than 6.0 in/hr in any layer within 20 inches, or
3. Soils that are frequently ponded for long or very long duration during the growing season, or
4. Soils that are frequently flooded for long or very long duration during the growing season.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Inceptisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth, or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquept (*Aqu*, meaning water, plus *ept*, from Inceptisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haplaquepts (*Hapl*, meaning minimal horizonation, plus *aquept*, the suborder of the Inceptisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Haplaquepts.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, nonacid, mesic Typic Haplaquepts.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The textures of the surface layer or of the substratum can vary within a series.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetical order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other series. A pedon, a small three dimensional area of soil that is typical of the series in the survey area, is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (USDA, 1951). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (USDA, 1975), and in "Keys to Soil Taxonomy" (USDA, 1987). Unless otherwise stated, colors in the descriptions are for moist soil, using the verbal color description which matches the Munsell color notation (Kollmorgen, 1992). Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units".

Bernardston Series

The Bernardston series consists of very deep, well drained soils on drumlins and smoothly-sloping ground moraine in areas associated with phyllite and schist bedrock in the northwestern part of the county. These soils formed in friable loamy eolian deposits overlying a firm substratum of loamy glacial till. Slopes range from 3 to 35 percent.

Bernardston soils are similar to Paxton soils and adjacent to Charlton and moderately well drained Pittstown soils. Paxton soils are lighter in color, have less silt in the solum, and lack dark-colored channers and flagstones. Pittstown soils have distinct or prominent masses of iron accumulation in the lower B horizon and are commonly in drainage swales adjacent to Bernardston soils. Charlton soils lack the dark minerals and have brighter colors than Bernardston soils.

A typical pedon of Bernardston very fine sandy loam, 8 to 15 percent slopes, is located 2,550 feet roughly east by north of the intersection of Sargent Road and Old Ayer Road, or 2,250 feet east along Indian Hill Road from its intersection with Old Ayer Road, and 1,950 feet due south of Indian Hill Road, in the town of Groton; USGS Ayer topographic quadrangle; lat. 42 degrees 34 minutes 57 seconds N. and long. 71 degrees 33 minutes 44 seconds W., NAD83:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) very fine sandy loam; weak medium granular structure; very friable; many very fine and fine, common medium, and few coarse roots; 5 percent gravel; strongly acid; abrupt smooth boundary.

Bw1—3 to 14 inches; dark yellowish brown (10YR 4/4) channery silt loam; weak fine granular structure; very friable; common very fine and fine and few medium roots; 15 percent channers; strongly acid; clear wavy boundary.

Bw2—14 to 21 inches; yellowish brown (10YR 5/4) channery silt loam; weak fine granular structure; friable; few very fine, fine, and medium roots; 15 percent channers; moderately acid; abrupt wavy boundary.

Cd1—21 to 26 inches; light olive brown (2.5Y 5/3) channery silt loam; weak medium platy structure; firm; few very fine and fine roots; 20 percent channers; moderately acid; clear smooth boundary.

Cd2—26 to 65 inches; olive brown (2.5Y 4/3) channery silt loam; weak medium platy structure; very firm; 25 percent channers; moderately acid.

The thickness of the solum ranges from 20 to 30 inches. The volume of rock fragments ranges from 5 to 25 percent in the A, B, and C horizons. Fifty to 75 percent of the rock fragments are dark-colored channers and flagstones of slate and phyllite. Soil reaction ranges from very strongly acid to moderately acid throughout.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. Texture is very fine sandy loam.

The Bw1 horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6. The Bw2 horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 3 to 6. The B horizons are very fine sandy loam, loam, or silt loam.

The Cd horizons have hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 or 3. They are silt loam, loam, or very fine sandy loam. Consistence is firm or very firm.

Birchwood Series

The Birchwood series consists of very deep, moderately well drained soils on lower side slopes and toe slopes of drumlins adjacent to glacial stream terraces and outwash plains. These soils formed in sandy glaciofluvial deposits overlying firm loamy glacial till. Slopes range from 0 to 15 percent but is predominantly 3 to 8 percent.

Birchwood soils are mapped adjacent to somewhat excessively drained Merrimac soils, which are found on glacial outwash. Birchwood soils are also adjacent to Sudbury soils, which are outwash soils with finer textures in the solum and sandier textures in the substratum.

A typical pedon of Birchwood fine sandy loam, 3 to 8 percent slopes, is located 830 feet northwest of the intersection of Douglas Drive and Groton School Road in Ayer, and 1,040 feet west of Farmers' Row (Route 111), at the edge of a field in the town of Groton; USGS Ayer topographic quadrangle; lat. 42 degrees 34 minutes 57 seconds N. and long. 71 degrees 35 minutes 17 seconds W., NAD83:

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; many fine and very fine roots; 5 percent gravel; 5 percent stones; very strongly acid; abrupt smooth boundary.

Bw1—5 to 25 inches; yellowish brown (10YR 5/6) loamy fine sand; massive; very friable; common fine and medium roots; 5 percent gravel; 5 percent cobbles; very strongly acid; gradual wavy boundary.

Bw2—25 to 38 inches; light yellowish brown (10YR 6/4) loamy sand; massive; very friable; few fine roots; few fine distinct light brownish gray (10YR 6/2) redoximorphic depletions; very strongly acid; clear smooth boundary.

2Cd—38 to 65 inches; grayish brown (2.5Y 5/2) gravelly fine sandy loam; massive; very firm; common fine and medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; 10 percent gravel; 5 percent cobbles; 5 percent stones; very strongly acid.

The thickness of the solum ranges from 20 to 38 inches. Rock fragments range from 0 to 25 percent by volume in the surface layer, 0 to 20 percent in the subsoil and 5 to 35 percent in the substratum. Soil reaction ranges from very strongly acid to slightly acid throughout.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 to 4. Texture is fine sandy loam.

The Bw horizons have hue of 7.5YR to 2.5Y, and value and chroma of 4 to 6. They are loamy fine sand, loamy sand, fine sand, or sand.

The 2Cd horizon has hue of 2.5Y or 5Y, value of 2 to 5, and chroma of 1 to 4. Texture is fine sandy loam, loam, or silt loam. Consistence is firm or very firm.

Birdsall Series

The Birdsall series consists of very deep, very poorly drained soils in depressions and low areas of glacial lake plains. These soils formed in loamy and silty eolian deposits overlying glaciofluvial deposits. Slopes range from 0 to 1 percent.

Birdsall soils are commonly adjacent to Scarboro soils, which formed in sandy glaciofluvial deposits. Swansea soils have a shallow organic layer at the surface, poorly drained Wareham soils are sandier, and poorly drained Raypol soils have coarser textures in the substratum.

A typical pedon of Birdsall mucky silt loam, 0 to 1 percent slopes, is located 1,750 feet northwest along the Boston and Maine Railroad track from its intersection with Lincoln Road, and 550 feet east of the tracks, in the town of Lincoln; USGS Concord and Maynard topographic quadrangles; lat. 42 degrees 25 minutes 37 seconds N. and long. 71 degrees 19 minutes 37 seconds W., NAD83:

A—0 to 15 inches; black (10YR 2/1) mucky silt loam; weak fine and medium subangular blocky structure; very friable; many fine and common medium roots; very strongly acid; abrupt smooth boundary.
Bg—15 to 27 inches; gray (10YR 6/1) silt loam; massive; firm; common fine and medium prominent yellowish red (5YR 4/6) masses of iron accumulation; strongly acid; gradual wavy boundary.
BC—27 to 30 inches; light brownish gray (2.5Y 6/2) silt loam; massive; firm; moderately acid; gradual wavy boundary.
Cg1—30 to 50 inches; gray (2.5Y 6/0) silt loam; massive; firm; slightly acid; gradual smooth boundary.
Cg2—50 to 65 inches; gray (2.5Y 5/0) silt loam; massive; firm; slightly acid.

Thickness of the solum ranges from 14 to 30 inches. Soil reaction ranges from very strongly acid to moderately acid in the A horizon and from strongly acid to neutral in the B and C horizons.

The A horizon has hue of 10YR or 2.5Y, value of 1 to 3, and chroma of 1 or 2. Some pedons have highly decomposed organic material up to 8 inches thick, at the surface. The A horizon is silt loam or its mucky analog.

The Bg and BC horizons have hue of 7.5YR to 5Y, values of 4 to 7, and chroma of 0 to 2. They are silt loam or very fine sandy loam.

The Cg horizons have hue of 2.5Y to 5Y, value of 4 to 7, and chroma of 0 to 2. They are silt, silt loam, very fine sandy loam, loamy very fine sand, or very fine sand.

Broadbrook Series

The Broadbrook series consists of very deep, well drained soils on drumlins in the southern part of the county. These soils formed in a silty mantle of eolian material overlying firm loamy glacial till. Slopes range from 3 to 25 percent.

Broadbrook soils are commonly adjacent to moderately well drained Rainbow and well drained Narragansett soils, and are similar to well drained Paxton soils, which have more sand in the B horizon.

A typical pedon of Broadbrook very fine sandy loam, 3 to 8 percent slopes, very stony, is located 800 feet north of Interstate 90 and 190 feet east of Maidstone Road, at the edge of an abandoned field in the town of Natick; USGS Natick and Framingham topographic quadrangles; lat. 42 degrees 19 minutes 51 seconds N. and long. 71 degrees 19 minutes 47 seconds W., NAD83:

Oe—0 to 2 inches: moderately decomposed leaves and pine needles.
Ap—2 to 10 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; massive; very friable; common fine and medium roots; 2 percent gravel; 3 percent stones; strongly acid; abrupt wavy boundary.
Bw—10 to 20 inches; light olive brown (2.5Y 5/4) gravelly very fine sandy loam; massive; friable; common fine, medium, and coarse roots; 10 percent gravel; 5 percent cobbles; strongly acid; abrupt wavy boundary.
2Cd—20 to 65 inches; olive (5Y 5/3) gravelly fine sandy loam; massive; firm; few fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; 20 percent gravel; 3 percent stones; strongly acid.

Thickness of the solum ranges from 18 to 38 inches. Rock fragments range from 0 to 20 percent by volume in the solum and 5 to 35 percent in the substratum. Soil reaction ranges from very strongly acid to moderately acid throughout.

The Ap horizon has hue of 7.5YR or 10YR and value and chroma of 2 to 4. It is very fine sandy loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6. It is very fine sandy loam or silt loam.

The 2Cd horizon has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 2 to 6. This horizon is fine sandy loam or sandy loam. Consistence is firm or very firm.

Canton Series

The Canton series consists of very deep, well drained soils on uplands. These soils formed in friable loamy eolian deposits overlying friable sandy glacial till or ice-contact stratified drift. Slopes range from 3 to 25 percent.

Canton soils are similar to Charlton, Montauk, and Scituate soils and adjacent to Hinckley soils. Charlton soils formed in friable loamy glacial till that has less sand and more silt in the substratum. Montauk soils formed in glacial till which has a dense, slowly permeable substratum. Hinckley soils have a sandier solum.

A typical pedon of Canton fine sandy loam is in a field located within an area of Canton fine sandy loam, 3 to 8 percent slopes, extremely stony, and is 1,500 feet west of the Pepperell town line and 200 feet northeast of the intersection of Todd Drive and Proctor Road, in the Townsend Harbor section of the town of Townsend; USGS Townsend topographic quadrangle; lat. 42 degrees 39 minutes 34 seconds N. and long. 71 degrees 39 minutes 43 seconds W., NAD83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam, yellowish brown (10YR 5/4) dry; weak fine and very fine granular structure; friable; many very fine, common fine and medium, and few coarse roots; 5 percent gravel; strongly acid; abrupt wavy boundary.

Bw—8 to 21 inches; dark yellowish brown (10YR 4/6) fine sandy loam; weak medium and fine subangular blocky structure; very friable; common very fine, fine, and medium and few coarse roots; 5 percent gravel; strongly acid; abrupt wavy boundary.

2C—21 to 65 inches; yellowish brown (10YR 5/6) gravelly loamy sand; massive; very friable; few fine and very fine, common medium, and few coarse roots; 25 percent gravel; 5 percent cobbles; moderately acid.

The thickness of the solum ranges from 18 to 30 inches. The rock fragments make up 5 to 25 percent by volume of the solum and 15 to 35 percent of the substratum. Soil reaction ranges from extremely acid through moderately acid.

The Ap horizon has hue of 10YR, value of 2 to 4, and chroma of 2 or 3. It is fine sandy loam. Some pedons have a redder hue.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 to 6. It is very fine sandy loam or fine sandy loam.

The 2C horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 or 3. Texture is loamy sand, loamy coarse sand, or sand.

Where Canton soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some areas, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Carver Series

The Carver series consists of very deep, excessively drained soils on glacial stream terraces, outwash plains and deltas. These soils formed in glaciofluvial sand and coarse sand. Slopes range from 0 to 15 percent.

Carver soils are similar to Hinckley and Windsor soils, though Hinckley soils have more gravel in the control section and Windsor soils have finer sand throughout. Carver soils are adjacent to moderately well drained Deerfield soils, which have redox depletion areas with a chroma of 2 or less within 40 inches of the surface, and to Quonset soils, which contain dark mineral fragments.

A typical pedon of Carver loamy coarse sand, 0 to 3 percent slopes, is located in a wooded area 650 feet south of Wharton Road and 970 feet southeast of the southern intersection of Wharton Road and Town Forest Road in the town of Groton; USGS Ayer topographic quadrangle; lat. 42 degrees 35 minutes 47 seconds N. and long. 71 degrees 36 minutes 12 seconds W., NAD83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) loamy coarse sand, pale brown (10YR 6/3) dry; structureless; very friable; many medium and common fine roots; very strongly acid; abrupt smooth boundary.

Bw—7 to 13 inches; yellowish brown (10YR 5/8) loamy coarse sand; single grain; loose; moderately acid; clear wavy boundary.

BC—13 to 21 inches; yellowish brown (10YR 5/6) coarse sand; single grain; loose; 8 percent gravel; moderately acid; gradual wavy boundary.

C1—21 to 35 inches; light yellowish brown (2.5Y 6/4) gravelly coarse sand; single grain; loose; 20 percent fine gravel; moderately acid; clear wavy boundary.

C2—35 to 65 inches; light yellowish brown (2.5Y 6/4) coarse sand; single grain; loose; moderately acid.

The solum thickness ranges from about 18 to 35 inches. The volume of coarse fragments ranges from 0 to 20 percent throughout the soil. Soil reaction ranges from extremely acid to moderately acid, except where the soil is limed.

The Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is loamy coarse sand.

Some pedons have a thin E horizon that is lighter in color but similar in texture to the A horizon.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 6. It is loamy sand, loamy coarse sand, sand, or coarse sand.

The BC horizon has hue of 7.5 to 10YR and value and chroma of 4 to 6. It is loamy coarse sand or coarse sand.

The C horizons have hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 to 6. They are loamy sand, loamy coarse sand, coarse sand, or sand.

Charlton Series

The Charlton series consists of very deep, well drained soils on ground moraine and on foot slopes of drumlins. These soils formed in friable loamy glacial till. Slopes range from 3 to 25 percent.

Charlton soils are similar to Canton, Paxton and Narragansett soils, but Canton soils have more sand in the substratum, Narragansett soils have less silt in the substratum, and Paxton soils have a dense, slowly or very slowly permeable substratum. Charlton soils are adjacent to very poorly drained Whitman, poorly drained Ridgebury, and moderately well drained Scituate and Woodbridge soils, all of which have a dense substratum. Charlton soils are also adjacent to moderately well drained Pittstown and well drained Newport soils, both of which have dark mineral fragments and darker soil colors than Charlton. The dense substratum in Scituate is sandy. Charlton soils are also adjacent to somewhat excessively drained Hollis soils, which have less than 20 inches depth to bedrock.

A typical pedon of Charlton fine sandy loam, 8 to 15 percent slopes, is located 460 feet east of Townsend Road and 400 feet north of the intersection of Route 119 and Townsend Road, in a wooded area in the town of Pepperell; USGS Townsend topographic quadrangle; lat. 42 degrees 39 minutes 2 seconds N. and long. 71 degrees 39 minutes 23 seconds W., NAD83:

A—0 to 5 inches; dark brown (7.5YR 3/3) fine sandy loam; weak medium granular structure; very friable; common fine and very fine and few medium and coarse roots; 5 percent gravel; 5 percent stones; very strongly acid; abrupt wavy boundary.

Bw1—5 to 14 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable; common fine and very fine and few medium roots; 5 percent gravel; 3 percent cobbles; 5 percent stones; strongly acid; clear wavy boundary.

Bw2—14 to 22 inches; yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; few fine, very fine, and medium roots; 5 percent gravel; 3 percent cobbles; 5 percent stones; strongly acid; clear wavy boundary.

C1—22 to 32 inches; grayish brown (10YR 5/2) gravelly sandy loam; weak medium subangular blocky structure; friable; few fine and medium roots; 20 percent gravel; 5 percent cobbles; 5 percent stones; strongly acid; gradual wavy boundary.

C2—32 to 65 inches; grayish brown (10YR 5/2) gravelly sandy loam; weak medium subangular blocky structure; firm; few fine roots; 20 percent gravel; 5 percent cobbles; 5 percent stones; strongly acid.

The thickness of the solum ranges from 20 to 38 inches. The volume of rock fragments ranges from 5 to 35 percent throughout the solum and substratum. Soil reaction ranges from very strongly acid to moderately acid.

The A horizon has hue of 7.5YR or 10YR, and value and chroma of 2 or 3. The Ap horizon, when present, has value of 3 or 4, and chroma of 2 to 4. The A horizon is fine sandy loam.

The upper part of the Bw horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6. The lower part of the Bw horizon has hue of 10YR or 2.5Y and value and chroma of 4 to 6. The B horizons are fine sandy loam or sandy loam.

The C horizons have hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 6. They are fine sandy loam or sandy loam.

Where Charlton soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is lower than that recognized for the series. In some pedons, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Deerfield Series

The Deerfield series consists of very deep, moderately well drained soils in slight depressions on glacial outwash plains and terraces and on the toe slopes of uplands. These soils formed in sandy glaciofluvial deposits. Slopes range from 0 to 8 percent.

Deerfield soils are commonly adjacent to poorly drained Wareham soils. Deerfield soils are similar to Sudbury soils, but have more sand and less silt in the solum.

A typical pedon of Deerfield loamy sand, 0 to 3 percent slopes, is located 1,700 feet north along Longley Street from its intersection with Nashua Road, and 250 feet east of the street, in a wooded area in the town of Groton; USGS Pepperell and Townsend topographic quadrangles; lat. 42 degrees 38 minutes 24 seconds N. and long. 71 degrees 34 minutes 4 seconds W., NAD83:

Oi—0 to 1 inch; slightly decomposed leaf litter.

Ap—1 to 11 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; many very fine and fine and few medium roots; strongly acid; abrupt wavy boundary.

Bw1—11 to 17 inches; yellowish brown (10YR 5/6) loamy sand; weak medium granular structure; very friable; common very fine and fine roots; moderately acid; clear wavy boundary.

Bw2—17 to 25 inches; yellowish brown (10YR 5/6) sand; single grain; loose; common very fine and fine roots; few fine distinct strong brown (7.5YR 5/8) masses of iron accumulation; moderately acid; clear smooth boundary.

C—25 to 65 inches; light brownish gray (10YR 6/2) coarse sand; single grain; loose; few very fine roots; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid.

The solum thickness ranges from 15 to 35 inches. The solum has 0 to 15 percent gravel by volume and the substratum has 0 to 20 percent gravel. Soil reaction ranges from very strongly acid to moderately acid throughout.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 to 3. Texture is loamy sand.

The Bw horizons have hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 6. The upper part of the Bw horizon is fine sandy loam, sandy loam, loamy sand, or sand. The lower part of the Bw horizon is loamy fine sand, loamy sand, fine sand, sand, or coarse sand.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. It is coarse sand, sand, or fine sand.

Freetown Series

The Freetown series consists of very deep, very poorly drained soils in depressions or low-lying areas like swamps, marshes, and bogs (fig. 26). These soils formed in more than 51 inches of highly decomposed organic material. Slopes range from 0 to 1 percent.

Freetown soils are similar to Swansea soils. However, Swansea soils have 16 to 51 inches of organic material overlying mineral soil. Some areas of Freetown soils also have ponded water at the surface.

A typical pedon of Freetown muck, 0 to 1 percent slopes, is located 300 feet north of Parkerville Road and 1,200 feet west of Garrison Road, in the town of Chelmsford; USGS Westford and Billerica topographic quadrangles; lat. 42 degrees 34 minutes 14 seconds N. and long. 71 degrees 23 minutes 23 seconds W., NAD83:

Oa1—0 to 7 inches; black (5YR 2.5/1) broken face muck; black (5YR 2/0) rubbed; 5 percent fiber; weak fine granular structure; friable; few coarse roots; extremely acid; clear smooth boundary.

Oe1—7 to 9 inches; dark reddish brown (5YR 3/2) broken face muck; reddish brown (5YR 4/3) rubbed; 75 percent fiber, 45 percent rubbed; massive; friable; many medium roots; extremely acid; clear smooth boundary.

Oa2—9 to 11 inches; black (N 2.5/0) broken face muck; dark reddish brown (5YR 2.5/2) rubbed; 25 percent fiber, 5 percent rubbed; massive; friable; many medium roots; extremely acid; clear smooth boundary.

Oa3—11 to 34 inches; black (5YR 2.5/1) broken face muck; very dark gray (5YR 3/1) rubbed; 25 percent fiber, 10 percent rubbed; massive; friable; extremely acid; clear smooth boundary.

Oa4—34 to 47 inches; dark reddish brown (5YR 3/3) broken face muck; dark reddish brown (5YR 3/2) rubbed; 60 percent fiber, 15 percent rubbed; massive; friable; extremely acid; clear smooth boundary.

Oa5—47 to 65 inches; dark reddish brown (5YR 3/2) broken face muck; dark reddish brown (5YR 2.5/2) rubbed; 25 percent fiber, 5 percent rubbed; massive; friable; extremely acid.

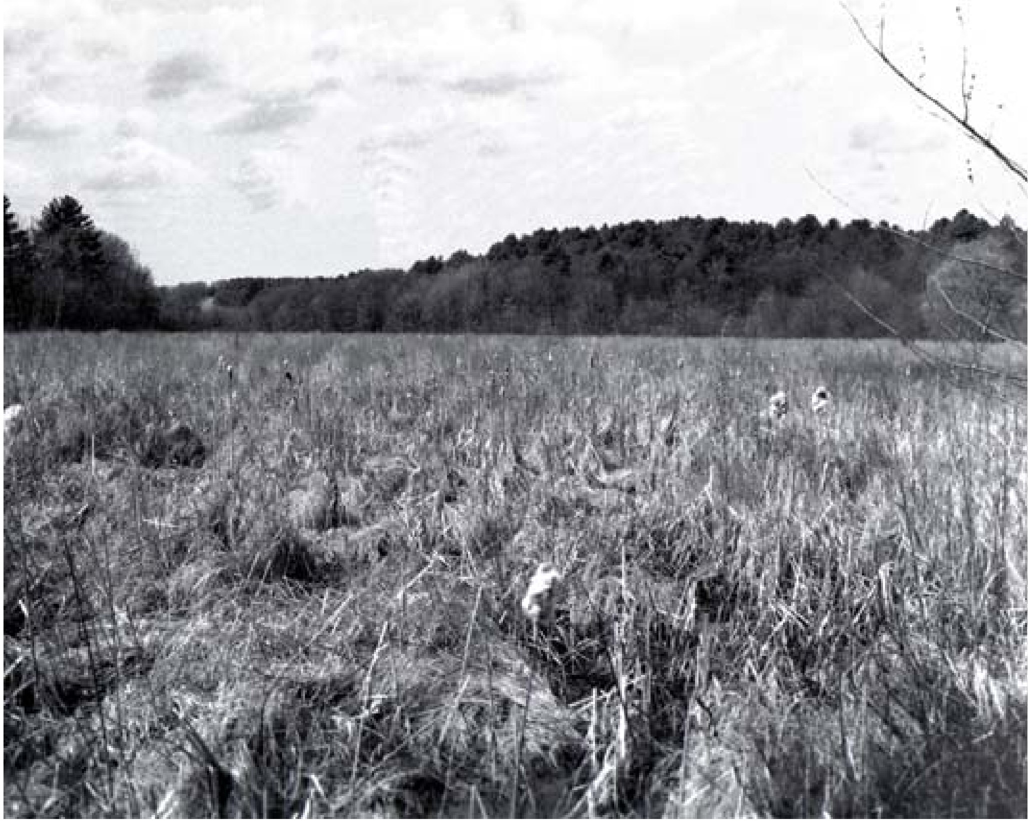

Figure 26.—An area of very poorly drained Freetown soils supporting typical wetland vegetation. Paxton soils are on the uplands in the background.

The depth to mineral material is 51 inches or more. Woody fragments comprise 0 to 25 percent of the soil by volume. The soils are predominantly sapric material, but many pedons contain thin layers of hemic material. These soils are extremely acid throughout.

The surface tier has hue of 5YR or 7.5YR, value of 2 or 3, and chroma of 0 to 2.

The subsurface tier is neutral or has hue of 5YR or 7.5YR, value of 2 to 4, and chroma of 0 to 4. Some pedons have redoximorphic features.

The bottom tier has hue of 5YR to 7.5YR, value of 2 or 3, and chroma of 0 to 2.

Haven Series

The Haven series consists of very deep, well drained soils on glacial outwash plains and terraces. These soils formed in loamy eolian material overlying sandy glaciofluvial material. Slopes range from 0 to 8 percent.

Haven soils are commonly adjacent to moderately well drained Scio and Tisbury soils, and excessively drained Hinckley soils. Scio soils are on higher parts of the slope, while Tisbury soils are in depressions. Hinckley soils have a sandier solum. Haven soils are similar to Merrimac soils, but Merrimac soils have a sandy solum.

A typical pedon of Haven silt loam, 3 to 8 percent slopes, is located 40 feet west of Clinton Street and 1,100 feet southeast of the intersection of Clinton Street and East Street, in the town of Hopkinton; USGS Holliston and Medfield topographic quadrangles; lat. 42 degrees 13 minutes 17 seconds N. and long. 71 degrees 28 minutes 6 seconds W., NAD83:

A—0 to 2 inches; black (10YR 2/1) silt loam; weak medium granular structure; very friable; many medium and common coarse roots; strongly acid; abrupt smooth boundary.

Bw1—2 to 20 inches; yellowish brown (10YR 5/8) silt loam; weak medium subangular blocky structure; friable; common medium roots; moderately acid; clear wavy boundary.

Bw2—20 to 32 inches; olive yellow (2.5Y 6/6) very fine sandy loam; massive; friable; common fine and medium roots; moderately acid; gradual wavy boundary.

2C1—32 to 45 inches; olive yellow (2.5Y 6/6) fine sand; single grain; loose; 10 percent gravel; moderately acid; clear wavy boundary.

2C2—45 to 65 inches; light yellowish brown (2.5Y 6/4) stratified sand and coarse sand; single grain; loose; 10 percent gravel; moderately acid.

The solum thickness and depth to the lithologic discontinuity range from about 18 to 36 inches. Gravel content ranges from 0 to 15 percent by volume in the solum and 10 to 20 percent in the substratum. Soil reaction ranges from very strongly acid to moderately acid.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 to 3. Texture is silt loam.

The Bw horizons have hues of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8. They are silt loam or very fine sandy loam.

The 2C horizons have hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 6. They are stratified layers of loamy fine sand, loamy sand, loamy coarse sand, fine sand, sand, or coarse sand. In some pedons, these soils have more silt and less sand and fine sand in the control section.

Hinckley Series

The Hinckley series consists of very deep, excessively drained soils on glacial stream terraces, outwash plains, kames and eskers. These soils formed in sandy and gravelly glaciofluvial material, and in ice-contact stratified drift. Slopes range from 0 to 35 percent.

Hinckley soils are commonly adjacent to and formed in similar parent material as somewhat excessively drained Merrimac soils and moderately well drained Sudbury soils. They are also adjacent to moderately well drained Deerfield soils, which have fewer coarse fragments, and to well drained Canton soils, which formed in sandy glacial till. Hinckley soils are similar to Carver, Quonset and Windsor soils. Carver and Windsor soils have less than 15 percent coarse fragments in the control section. Quonset soils are darker in color, due to a high percentage of sand and coarse fragments derived from gray phyllite, slate, and shale.

A typical pedon of Hinckley loamy sand, 0 to 3 percent slopes, is located 300 feet north of Brigham Street and 700 feet east of the Assabet River, in a field in the town of Hudson; USGS Marlborough topographic quadrangle; lat. 42 degrees 22 minutes 16 seconds N. and long. 71 degrees 35 minutes 24 seconds W., NAD83:

Ap—0 to 7 inches; dark brown (10YR 3/3) loamy sand, light yellowish brown (10YR 6/4) dry; weak medium and fine granular structure; friable; many fine and common medium and coarse roots; 5 percent gravel; 5 percent cobbles; strongly acid; abrupt smooth boundary.

Bw—7 to 17 inches; yellowish brown (10YR 5/6) very gravelly loamy sand; single grain; loose; many fine and common medium roots; 40 percent gravel; 10 percent cobbles; 3 percent stones; strongly acid; gradual wavy boundary.

C—17 to 65 inches; olive brown (2.5Y 4/3) stratified extremely gravelly sand; single grain; loose; few fine roots; 50 percent gravel; 15 percent cobbles; 5 percent stones; moderately acid.

The thickness of the solum ranges from 12 to 24 inches. The volume of coarse fragments ranges from 10 to 50 percent in the solum and from 35 to 70 percent in the substratum. In unlimed areas, soil reaction is moderately acid or strongly acid.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 or 3. Texture is loamy sand.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8. The upper part of the B horizon is fine sandy loam, sandy loam, loamy sand, or loamy coarse sand. The lower part of the B horizon is loamy fine sand, loamy sand, loamy coarse sand, sand, or coarse sand.

The C horizon has hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 2 to 4. Texture is stratified fine sand, sand, or coarse sand.

In many pedons where these soils are on slopes greater than 15 percent, the gravel content is less than 10 percent by volume in the solum and 15 percent in the substratum.

Where Hinckley soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some areas, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Hollis Series

The Hollis series consists of shallow, somewhat excessively drained soils formed in shallow ground moraine on rocky upland hills and ridges. These soils formed in a thin mantle of loamy glacial till. Slopes range from 3 to 35 percent.

Hollis soils are similar to and mapped in a complex with Charlton soils. Charlton soils are more than 65 inches deep to bedrock. Adjacent to the Hollis soils are well drained Canton, Narragansett, and Montauk soils and moderately well drained Scituate and Woodbridge soils on the lower parts of hillslopes, and very poorly drained Whitman and Swansea soils in drainageways and low areas. Scituate and Montauk soils have a dense, sandy substratum, and Woodbridge soils have a dense, loamy substratum. Swansea soils have about 20 inches of organic materials in their surface layers.

A typical pedon of Hollis fine sandy loam is located in an area of Charlton-Hollis-Rock outcrop complex, 8 to 15 percent slopes, which is 250 feet east of Groton Road, 290 feet northeast of Oak Ridge Drive, and 2,200 feet north of Central Avenue, in the town of Ayer; USGS Ayer topographic quadrangle; lat. 42 degrees 33 minutes 47 seconds N. and long. 71 degrees 34 minutes 26 seconds W., NAD83:

A—0 to 2 inches; black (10YR 2/1) fine sandy loam; weak fine granular structure; very friable; common very fine and fine and few medium roots; 5 percent stones; strongly acid; abrupt wavy boundary.

Bw—2 to 14 inches; dark yellowish brown (10YR 4/6) fine sandy loam; weak medium subangular blocky structure; very friable; common very fine and fine and few medium roots; 10 percent gravel; moderately acid; abrupt smooth boundary.

R—14 inches; hard granite bedrock.

The solum thickness and depth to bedrock range from 10 to 20 inches. The volume of rock fragments ranges from 5 to 35 percent throughout. Soil reaction ranges from very strongly acid to moderately acid throughout.

The A horizon has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 1 to 3. Texture is fine sandy loam.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 to 8. Texture is fine sandy loam or sandy loam.

C horizons are present in many pedons.

Where Hollis soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is lower than that recognized for the series. In some areas, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Where these soils are mapped in a complex with Narragansett soils, there is more silt and less sand in the solum.

Limerick Series

The Limerick series consists of very deep, poorly drained soils formed in loamy alluvium on low-lying floodplains. Slopes range from 0 to 3 percent.

Limerick soils formed in the same parent material as, and are commonly adjacent to, very poorly drained Saco soils. Limerick soils are similar to Rippowam soils, which have more sand in the solum.

A typical pedon of Limerick silt loam, 0 to 3 percent slopes, is located 4,000 feet west of the old Boston and Maine railroad grade, 2,600 feet north of Nod Road, and 15 feet east of the Nashua River, in the town of Groton; USGS Pepperell and Townsend topographic quadrangles; lat. 42 degrees 38 minutes 6 seconds N. and long. 71 degrees 36 minutes 26 seconds W., NAD83:

A—0 to 3 inches; very dark grayish brown (2.5Y 3/2) silt loam; weak medium granular structure; very friable; many very fine and fine roots; many fine distinct olive brown (2.5Y 4/4) masses of iron accumulation; moderately acid; abrupt smooth boundary.

Cg1—3 to 10 inches; gray (5Y 5/1) silt loam; massive; friable; common very fine and fine roots; many fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation; strongly acid; clear wavy boundary.

Cg2—10 to 40 inches; dark gray (5Y 4/1) silt loam; massive; friable; common very fine and fine roots; many fine prominent light olive brown (2.5Y 5/6) masses of iron accumulation; moderately acid; clear wavy boundary.

Cg3—40 to 65 inches; very dark gray (5Y 3/1) loamy fine sand; massive; friable; moderately acid.

Soil reaction is strongly acid or moderately acid in the A horizon and upper part of the C horizon, and ranges from moderately acid to neutral in the lower substratum, within a depth of 40 inches.

The A horizon has hue of 10YR to 5Y, value of 3 or 4, and chroma of 2 or 3. Texture is silt loam.

The C horizons have hue of 10YR to 5Y, value of 4 or 5, and chroma of 1 to 3. Below 40 inches, value of 3 is allowed. They are silt loam or very fine sandy loam to a depth of 40 inches and silt loam to loamy sand below a depth of 40 inches.

Merrimac Series

The Merrimac series consists of very deep, somewhat excessively drained soils on glacial stream terraces and outwash plains. These soils formed in friable loamy eolian deposits overlying loose sandy glaciofluvial material. Slopes range from 0 to 15 percent.

Merrimac soils are mapped adjacent to excessively drained Windsor soils, which are sandier in the solum, and lack rock fragments. Merrimac soils are mapped in a drainage sequence with moderately well drained Sudbury soils (fig. 27). They are similar to Hinckley and Windsor soils. However, Hinckley soils have more gravel in the solum, and Windsor soils are sandier in the solum and lack rock fragments.

A typical pedon of Merrimac fine sandy loam, 0 to 3 percent slopes, is located 1,500 feet west of Glen Street, 900 feet east of the Charles River, and 500 feet

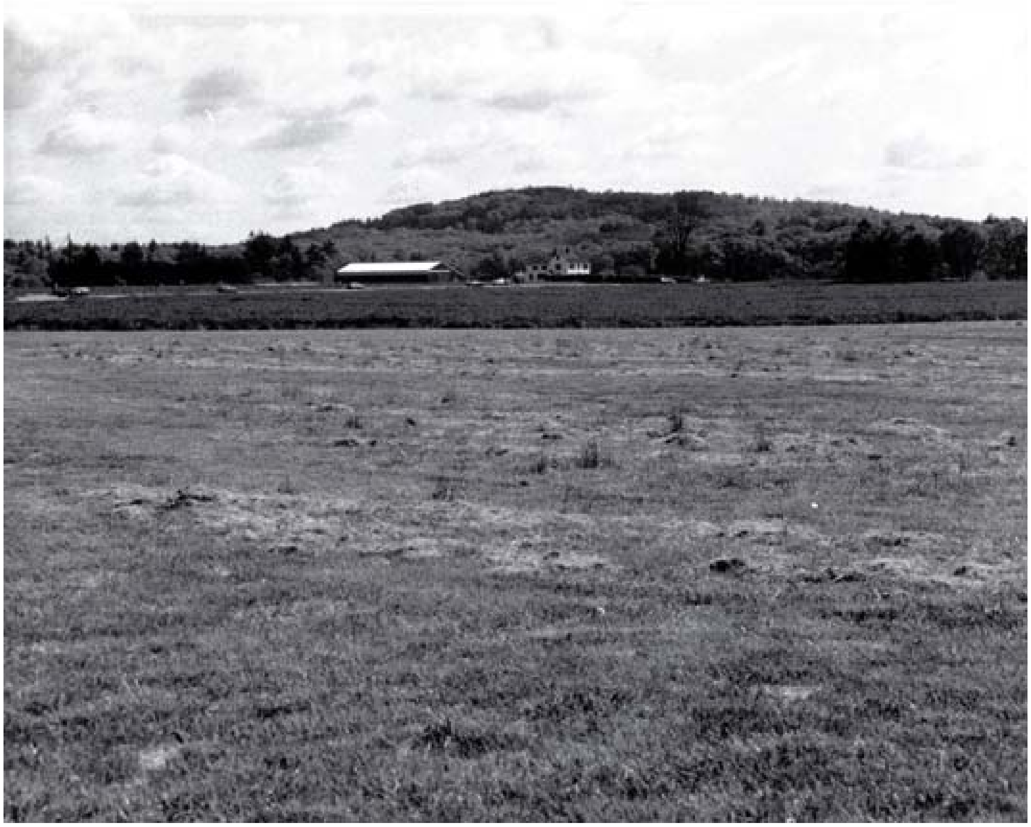

Figure 27.—Some of the best agricultural soils are those formed on broad, level areas of glacial meltwater deposits. Merrimac and Sudbury soils comprise the base for this open cropland. The wooded hill in the background is comprised of Paxton soils.

northwest of the maintenance garage at the Glenwood Cemetery, in a wooded part of an abandoned field in the town of Natick; USGS Framingham topographic quadrangle; lat. 42 degrees 15 minutes 52 seconds N. and long. 71 degrees 19 minutes 16 seconds W., NAD83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) fine sandy loam, light yellowish brown (10YR 6/4) dry; weak fine granular structure; very friable; many very fine and fine and common medium and coarse roots; 10 percent gravel; very strongly acid; abrupt smooth boundary.

Bw—9 to 18 inches; dark yellowish brown (10YR 4/4) gravelly sandy loam; weak fine and medium subangular blocky structure; very friable; many very fine and fine and common medium and coarse roots; 20 percent gravel; strongly acid; abrupt smooth boundary.

BC—18 to 26 inches; dark yellowish brown (10YR 4/4) very gravelly loamy coarse sand; single grain; loose; common very fine and fine and few medium and coarse roots; 35 percent gravel; moderately acid; clear wavy boundary.

C1—26 to 33 inches; light yellowish brown (2.5Y 6/4) extremely gravelly coarse sand; single grain; loose; common very fine and fine and few medium roots; 55 percent gravel; 5 percent cobbles; moderately acid; abrupt smooth boundary.

C2—33 to 65 inches; light olive brown (2.5Y 5/4) gravelly coarse sand; single grain; loose; 25 percent gravel; 5 percent cobbles; moderately acid.

The thickness of the solum ranges from 18 to 30 inches. The volume of rock fragments ranges from 5 to 25 percent in the solum and 25 to 70 percent in the substratum. Soil reaction ranges from extremely acid to moderately acid throughout.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. Texture is fine sandy loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8. Texture is fine sandy loam or sandy loam. The BC horizon has the same color range. Texture is loamy sand or loamy coarse sand.

The C horizons have hue of 10YR or 2.5Y, value of 4 to 8, and chroma of 4 to 6. They are stratified loamy sand, loamy coarse sand, sand, or coarse sand.

Montauk Series

The Montauk series consists of very deep, well drained soils on smooth sloping ground moraine and irregularly shaped drumlins. These soils formed in a mantle of friable loamy eolian deposits overlying dense sandy glacial till. Slopes range from 3 to 25 percent.

Montauk soils are commonly adjacent to well drained Charlton soils and moderately well drained Scituate and Woodbridge soils. Charlton soils have a loose substratum, and both Charlton and Woodbridge have finer texture in the substratum. Montauk soils are similar to the Canton and Paxton soils. Canton soils have a friable or loose substratum, while Paxton soils have less sand and more silt in the substratum.

A typical pedon of Montauk fine sandy loam falls in a polygon of Montauk fine sandy loam, 15 to 25 percent slopes, located 2,100 feet south of Route 113 and 1,000 feet east of Elm Street, in the town of Pepperell; USGS Pepperell and Townsend topographic quadrangles; lat. 42 degrees 39 minutes 41 seconds N. and long. 71 degrees 35 minutes 37 seconds W., NAD83:

A—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; common fine and very fine and few medium roots; 5 percent gravel; moderately acid; abrupt wavy boundary.

Bw1—7 to 20 inches; yellowish brown (10YR 5/6) gravelly sandy loam; weak fine and medium subangular blocky structure; friable; common very fine roots; 10 percent gravel; 5 percent cobbles; moderately acid; abrupt wavy boundary.

Bw2—20 to 29 inches; light olive brown (2.5Y 5/6) sandy loam; weak fine and medium subangular blocky structure; friable; few very fine roots; 10 percent gravel; moderately acid; clear wavy boundary.

Cd—29 to 65 inches; light olive brown (2.5Y 5/4) gravelly loamy sand; weak medium and coarse platy structure; firm; 25 percent gravel; 5 percent cobbles; moderately acid.

The thickness of the solum ranges from 18 to 30 inches. The volume of rock fragments ranges from 5 to 25 percent in the solum and 10 to 45 percent in the substratum. Soil reaction ranges from extremely acid to moderately acid throughout.

The A horizon has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 1 to 4. Texture is fine sandy loam.

The Bw horizons have hue of 7.5YR to 2.5Y value of 4 to 6, and chroma of 3 to 8. The Bw horizon is sandy loam, fine sandy loam, or loam in the upper part, and sandy loam or fine sandy loam in the lower part.

The Cd horizon has hue of 2.5Y or 5Y, value of 5 or 6, and chroma of 1 to 4. Texture is loamy coarse sand, loamy sand, loamy fine sand, sandy loam, or fine sandy loam. At least one subhorizon of the Cd horizon is loamy fine sand or coarser. Consistence is firm or very firm.

Where Montauk soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some pedons, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Narragansett Series

The Narragansett series consists of very deep, well drained soils on ground moraines. These soils formed in a mantle of silty and loamy eolian deposits overlying sandy glaciofluvial deposits or friable sandy glacial till. Slopes range from 3 to 25 percent.

Narragansett soils are similar to Canton and Charlton soils and are commonly adjacent to Haven, Scituate, and Windsor soils. Canton soils have less silt in the solum. Charlton soils lack contrasting textures and have more sand in the solum and more silt in the substratum. Haven soils are in valleys and have stratified sand and gravel in the substratum. Moderately well drained Scituate soils are sandier in the solum and have a dense, sandy pan. Excessively drained Windsor soils are sandier.

A typical pedon of Narragansett silt loam is located in an area of Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes, in an old borrow pit 630 feet west of Concord Road and 340 feet south of the Lincoln-Weston town boundary, in the town of Weston; USGS Concord and Maynard topographic quadrangles; lat. 42 degrees 23 minutes 33 seconds N. and long. 71 degrees 19 minutes 27 seconds W., NAD83:

Oi—0 to 2 inches; slightly-decomposed pine needles, leaves and woody material.

A—2 to 7 inches; dark brown (10YR 3/3) silt loam; weak medium and fine granular structure; very friable; many fine and common medium and coarse roots; strongly acid; clear wavy boundary.

Bw—7 to 35 inches; yellowish brown (10YR 5/6) silt loam; weak medium and fine subangular blocky structure; very friable; common fine and medium and few coarse roots; 2 percent gravel; strongly acid; clear wavy boundary.

2C1—35 to 60 inches; light olive brown (2.5Y 5/4) very gravelly loamy sand; single grain; loose; few fine, medium, and coarse roots; 30 percent gravel; 5 percent cobbles; 10 percent stones; moderately acid; gradual wavy boundary.

2C2—60 to 65 inches; light olive brown (2.5Y 5/4) very gravelly loamy sand; single grain; loose; 40 percent gravel; 5 percent stones; moderately acid.

The thickness of the solum ranges from 18 to 35 inches. The volume of rock fragments ranges from 0 to 25 percent in the solum and from 10 to 50 percent in the substratum. Soil reaction ranges from extremely acid to moderately acid.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 to 3. Texture is silt loam.

The Bw horizon has hue of 7.5YR to 2.5Y and value and chroma of 4 to 6. Texture is loam, silt loam, or very fine sandy loam

The 2C horizons have hue of 10YR through 5Y, value of 3 to 5, and chroma of 2 to 6. They are loamy fine sand, loamy sand, loamy coarse sand, fine sand, or sand.

Newport Series

The Newport series consists of very deep, well drained soils on till plains, low ridges and drumlins in the Boston Basin. These soils formed in friable loamy glacial till overlying a dense lodgment till derived principally from phyllite or argillite. Slopes range from 3 to 25 percent.

Newport soils are similar to moderately well drained Pittstown soils, and to Paxton soils, which lack the dark rock fragments and colors in the B horizon of the Newport soils. Newport soils may be mapped adjacent to Udorthents and Urban land.

A typical pedon of Newport channery fine sandy loam, 8 to 25 percent slopes, is located adjacent to the northeast side of the parking lots north of Bentley College, 850 feet southeast of Forest Street, in the town of Waltham; USGS Lexington and

Boston North topographic quadrangles; lat. 42 degrees 23 minutes 24 seconds N. and long. 71 degrees 13 minutes 10 seconds W., NAD83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) channery fine sandy loam, light yellowish brown (10YR 6/4) dry; weak medium granular structure; very friable; many very fine and fine and common medium roots; 15 percent channers; strongly acid; abrupt smooth boundary.

Bw—8 to 18 inches; olive brown (2.5Y 4/4) channery silt loam; weak medium subangular blocky structure; friable; few very fine and fine and common medium and coarse roots; 15 percent channers; 5 percent cobbles; 5 percent stones; moderately acid; abrupt smooth boundary.

BC—18 to 24 inches; olive brown (2.5Y 4/4) channery sandy loam; massive; friable; few very fine roots; 20 percent channers; 5 percent cobbles; 5 percent stones; moderately acid; clear wavy boundary.

Cd—24 to 65 inches; olive gray (5Y 4/2) channery fine sandy loam with lenses of channery loamy sand; massive; firm; 15 percent channers; 5 percent cobbles; moderately acid.

The thickness of the solum ranges from 20 to 30 inches. Rock fragments of gravel and channers make up 5 to 30 percent by volume of the solum and 10 to 35 percent of the substratum. Gravel and dark-colored channers of phyllite or argillite comprise 75 percent or more of the coarse fragments. Soil reaction ranges from very strongly acid to moderately acid throughout.

The Ap horizon has hue of 10YR to 5Y, value of 2 or 3, and chroma of 1 to 3. Texture is fine sandy loam.

The Bw horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 to 4. Texture is fine sandy loam, very fine sandy loam, silt loam, or loam.

The BC horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 to 4. Texture is fine sandy loam, sandy loam, or loamy sand.

The Cd horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 or 3. Texture is fine sandy loam, very fine sandy loam, silt loam, or loam. Consistence is firm or very firm.

Occum Series

The Occum series consists of very deep, well drained soils on high terraces of floodplains. These soils formed in loamy alluvium overlying sandy alluvium. Slopes range from 0 to 3 percent.

The Occum soils are similar to Suncook soils, except that Suncook soils have more sand and less silt throughout. Well drained Charlton soils are on adjacent landforms.

A typical pedon of Occum very fine sandy loam, 0 to 3 percent slopes, is located about 250 feet north of Route 225 and 300 feet east of Hill Road, in a crop field in the town of Groton; USGS Ayer topographic quadrangle; lat. 42 degrees 36 minutes 21 seconds N. and long. 71 degrees 36 minutes 5 seconds W., NAD83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) very fine sandy loam, yellowish brown (10YR 5/4) dry; weak moderate granular structure; friable; few medium roots; slightly acid; abrupt smooth boundary.

Bw—9 to 21 inches; light olive brown (2.5Y 5/6) very fine sandy loam; massive; friable; few fine roots; moderately acid; clear wavy boundary.

CB—21 to 26 inches; yellowish brown (10YR 5/6) sand; single grain; loose; few fine roots; moderately acid; clear wavy boundary.

C1—26 to 45 inches; light olive brown (2.5Y 5/6) fine sand; single grain; loose; few medium roots; few medium distinct yellowish brown (10YR 5/8) masses of iron accumulation; slightly acid; abrupt wavy boundary.

C2—45 to 65 inches; light olive brown (2.5Y 5/4) gravelly loamy sand; single grain; loose; 25 percent gravel; 5 percent cobbles; slightly acid.

The solum thickness ranges from 20 to 40 inches. The volume of rock fragments ranges from 0 to 15 percent in the solum and from 0 to 60 percent in the substratum. Soil reaction ranges from very strongly acid to slightly acid throughout.

The A or Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 4. Texture is very fine sandy loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 3 to 8, and chroma of 3 to 6. Texture is fine sandy loam, very fine sandy loam, or loam. Some pedons have thin strata of loam, very fine sand, or silt loam.

Some pedons have a CB horizon.

The C and the CB horizons have hue of 7.5YR to 5Y, value of 3 to 7, and chroma of 2 to 6. They are stratified loamy fine sand, loamy sand, loamy coarse sand, fine sand, sand, or coarse sand.

Paxton Series

The Paxton series consists of very deep, well drained soils on drumlins and smoothly sloping ground moraine. These soils formed in friable loamy eolian deposits overlying dense loamy glacial till. Slopes range from 3 to 35 percent.

Paxton soils are commonly adjacent to poorly drained Ridgebury soils (fig. 28) and moderately well drained Woodbridge soils. Paxton soils are similar to the Charlton and Montauk soils, though Charlton soils have a more friable substratum, and Montauk soils have more sand and less silt in the substratum.

A typical pedon of Paxton fine sandy loam is located at the edge of a cleared area

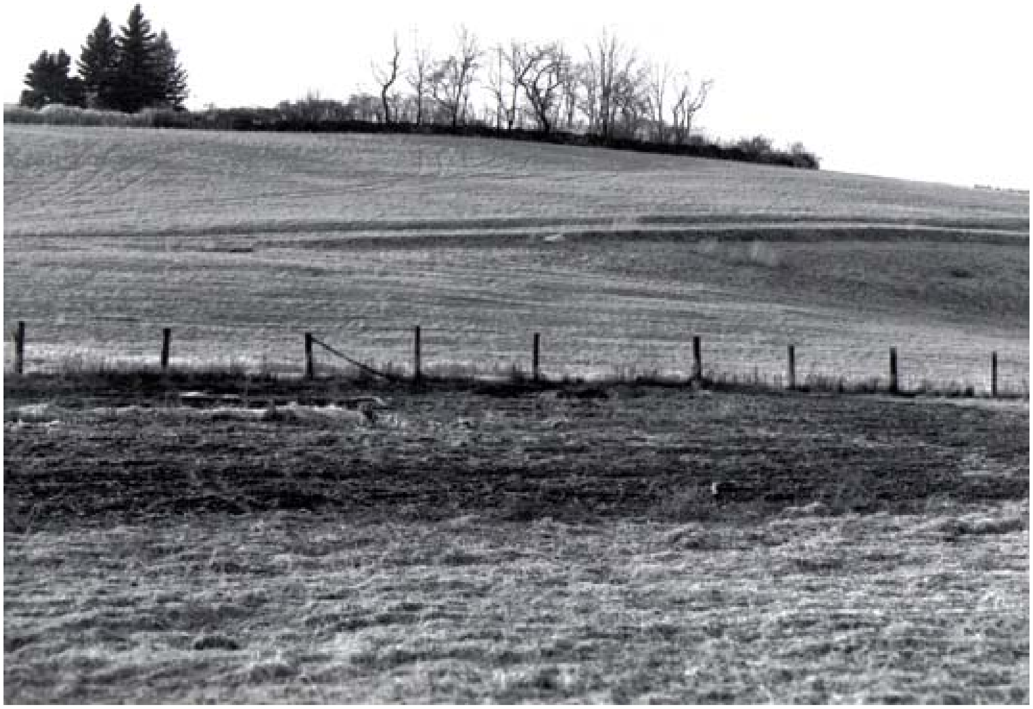

Figure 28.—Paxton soils typically formed on smooth upland hills such as the one in the background. The dark area in the foreground is on an area of poorly drained Ridgebury soils.

within a polygon of Paxton fine sandy loam, 3 to 8 percent slopes, extremely stony, which lies 1,000 feet northwest of the junction of Otis Street and Robin Hill Road, in the town of Marlborough; USGS Marlborough topographic quadrangle; lat. 42 degrees 21 minutes 11 seconds N. and long. 71 degrees 36 minutes 26 seconds W., NAD83:

Ap—0 to 7 inches; dark yellowish brown (10YR 3/4) fine sandy loam, light yellowish brown (10YR 6/4) dry; weak fine granular structure; very friable; common fine and few medium roots; 5 percent gravel; strongly acid; abrupt smooth boundary.

Bw1—7 to 13 inches; yellowish brown (10YR 5/8) fine sandy loam; massive; friable; few fine roots; 5 percent gravel; strongly acid; gradual smooth boundary.

Bw2—13 to 22 inches; olive yellow (2.5Y 6/6) sandy loam; massive; friable; few fine and medium roots; 5 percent gravel; strongly acid; clear smooth boundary.

Cd1—22 to 26 inches; light olive brown (2.5Y 5/4) sandy loam; massive; firm; few fine roots; 5 percent gravel; moderately acid; abrupt smooth boundary.

Cd2—26 to 65 inches; grayish brown (2.5Y 5/2) fine sandy loam; moderate very coarse platy structure; very firm; 5 percent gravel; 2 percent cobbles; moderately acid.

Thickness of the solum ranges from 18 to 38 inches. The volume of rock fragments ranges from 5 to 25 percent in the solum and from 5 to 35 percent in the substratum. Soil reaction ranges from very strongly acid to moderately acid.

The Ap horizon has hue of 10YR, value 3 or 4, and chroma 2 to 4. Texture is fine sandy loam.

The Bw1 horizon has hue of 7.5 YR or 10YR, value of 4 to 6, and chroma of 4 to 8. The Bw2 horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 6. The B horizons are loam, fine sandy loam, or sandy loam.

The Cd horizons have hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 2 to 4. They are fine sandy loam, sandy loam, or loam. They have weak or moderate, medium to very coarse platy structure, or they are massive. Consistence of the Cd horizons is firm, very firm, or extremely firm.

Where Paxton soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some areas, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Pittstown Series

The Pittstown series consists of very deep, moderately well drained soils in depressions and at the summits of drumlins in areas associated with schist and phyllite bedrock in the northwestern part of the county, and in the areas associated with shale bedrock in the Boston Basin. These soils formed in friable loamy eolian deposits overlying dense loamy glacial till. Slopes range from 0 to 8 percent.

Pittstown soils are commonly adjacent to Woodbridge soils, well drained Bernardston soils, and poorly drained Ridgebury soils. Ridgebury soils lack the dark mineral fragments of Pittstown soils, and Woodbridge soils have a sandier profile.

A typical pedon of Pittstown silt loam, 0 to 3 percent slopes, is located 1,300 feet north of Harbor Street and 250 feet east of West Street, in the town of Pepperell; USGS Townsend topographic quadrangle; lat. 42 degrees 39 minutes 19 seconds N. and long. 71 degrees 38 minutes 56 seconds W., NAD83:

A—0 to 2 inches; very dark grayish brown (10YR 3/2) silt loam; weak, very fine granular structure; friable; many fine and common medium and coarse roots; 5 percent channers; strongly acid; abrupt wavy boundary.

Bw1—2 to 8 inches; dark yellowish brown (10YR 4/4) silt loam; massive; friable; few very fine and fine and common medium and coarse roots; 5 percent channers; strongly acid; clear wavy boundary.

Bw2—8 to 17 inches; olive (5Y 4/4) silt loam; massive; friable; few very fine and fine and common medium and coarse roots; few fine prominent yellowish red (5YR 4/6) masses of iron accumulation; 10 percent channers; strongly acid; gradual irregular boundary.

Cd—17 to 65 inches; olive gray (5Y 4/2) channery silt loam; weak thin platy structure; extremely firm; few very fine roots; few fine prominent yellowish red (5YR 4/6) and common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; 15 percent channers; strongly acid.

Thickness of the solum ranges from 15 to 30 inches. The volume of rock fragments ranges from 5 to 25 percent in the A horizon, 5 to 20 percent in the B horizons, and 15 to 30 percent in the Cd horizon. The rock fragments are comprised of 25 to 75 percent channers and flagstones derived from dark-colored phyllite or schist. Soil reaction ranges from very strongly acid to moderately acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 2 or 3. Texture is silt loam. Many pedons have an Ap horizon with similar characteristics.

The Bw horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 to 6 in the upper part and hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 3 to 6 in the lower part. Texture is silt loam, loam, or very fine sandy loam.

The Cd horizon has hue of 2.5Y or 5Y, value of 4 or 5, and chroma of 2 or 3. Texture is silt loam or very fine sandy loam. Consistence is firm to extremely firm.

Pootatuck Series

The Pootatuck series consists of very deep, moderately well drained soils on floodplains. They formed in loamy alluvium overlying sandy alluvium. Slopes range from 0 to 3 percent.

Pootatuck soils are commonly adjacent to Occum soils, which are at higher terrace levels, and Rippowam soils, which are at lower terrace levels. Occum soils do not have masses of iron accumulation and redoximorphic depletions. Rippowam soils are wetter and have grayer colors throughout.

A typical pedon of Pootatuck fine sandy loam, 0 to 3 percent slopes, is located 1,100 feet west-southwest of the intersection of Townsend Road and the north end of Park Drive, and 180 feet north of the bank of the Squannacook River, in a wooded area in the town of Groton; USGS Shirley and Ayer topographic quadrangles; lat. 42 degrees 36 minutes 53 seconds N. and long. 71 degrees 38 minutes 27 seconds W., NAD83:

A thin layer of pine forest litter is found on the surface.

A—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sandy loam, pale brown (10YR 6/3) dry; weak medium and coarse granular structure; very friable; common fine and medium roots; strongly acid; abrupt smooth boundary.

Bw1—7 to 15 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium and coarse granular structure; friable; few medium and common very fine and fine roots; moderately acid; clear smooth boundary.

Bw2—15 to 23 inches; dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; friable; few very fine and fine roots; few fine distinct grayish brown (2.5Y 5/2) redoximorphic depletions; moderately acid; clear wavy boundary.

2C1—23 to 29 inches; light olive brown (2.5Y 5/4) coarse sand; single grain; loose; few very fine and fine roots; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and few fine distinct light brownish gray (2.5Y 6/2) redoximorphic depletions; moderately acid; abrupt smooth boundary.

2C2—29 to 65 inches; brown (10YR 5/3) gravelly coarse sand with thin strata of very coarse sand; single grain; loose; 20 percent gravel; slightly acid.

The thickness of the solum ranges from 20 to 40 inches. Gravel ranges from 0 to 15 percent by volume in the solum and from 0 to 40 percent in the substratum. Soil reaction ranges from very strongly acid to slightly acid throughout.

The A horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture is fine sandy loam.

The Bw horizons have hue of 10YR to 5Y, and value and chroma of 3 to 6. They are fine sandy loam or sandy loam.

The 2C horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 6. They are stratified loamy sand, loamy coarse sand, very fine sand, fine sand, sand, or coarse sand.

Quonset Series

The Quonset series consists of very deep, excessively drained soils on glacial outwash plains, terraces, eskers, and kames. These soils formed in sandy and gravelly glaciofluvial material derived principally from dark phyllite, shale, or slate. Slopes range from 3 to 35 percent. Reaction ranges from extremely acid to strongly acid in the solum, and from strongly acid to slightly acid in the substratum.

Quonset soils are similar to Hinckley soils, although the Hinckley soils lack the flat, dark-colored coarse fragments of Quonset soils. Quonset soils are adjacent to well drained Canton and moderately well drained Sudbury soils. Canton soils derive from glacial till and have fewer coarse fragments, and Sudbury soils have finer textures in the solum.

A typical pedon of Quonset sandy loam, 25 to 35 percent slopes, is located about 530 feet southwest of the junction of Nashua Road and Kemp Street, in a wooded area in the town of Groton; USGS Pepperell and Townsend topographic quadrangles; lat. 42 degrees 39 minutes 11 seconds N. and long. 71 degrees 33 minutes 30 seconds W., NAD83:

A thin layer of forest litter of pine needles, cones, twigs, and oak leaves is found on the surface.

A—0 to 7 inches; black (10YR 2/1) sandy loam, light brownish gray (10YR 6/2) dry; weak medium and fine granular structure; friable; common very fine and fine and few medium and coarse roots; 10 percent channers; strongly acid; abrupt smooth boundary.

Bw1—7 to 18 inches; dark yellowish brown (10YR 4/4) channery loamy sand; structureless; friable; common very fine and fine and few medium roots; 20 percent channers; 5 percent gravel; 5 percent cobbles; moderately acid; clear smooth boundary.

Bw2—18 to 28 inches; yellowish brown (10YR 5/6) very channery loamy sand; structureless; loose; common very fine and fine roots; 25 percent channers; 15 percent gravel; 5 percent cobbles; moderately acid; clear smooth boundary.

C—28 to 65 inches; olive brown (2.5Y 4/4) very channery sand; single grain; loose; few very fine and fine roots; 25 percent channers; 20 percent gravel; 3 percent cobbles; 2 percent stones; moderately acid.

The solum thickness ranges from 15 to 30 inches. Gravel, channers, flagstones, and cobbles constitute 0 to 50 percent by volume of the surface layer, 20 to 45 percent of the subsoil, and 30 to 60 percent of the substratum. Soil reaction ranges from extremely acid to strongly acid in the A horizon, extremely acid to moderately acid in the B horizons, and extremely acid to slightly acid in the C horizon.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is sandy loam.

The Bw1 horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 3 to 6. Texture is loamy sand or sandy loam. The Bw2 horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 4 to 6. Texture is loamy sand.

The C horizon has hue of 2.5Y or 5Y, value of 3 to 5, and chroma of 2 to 4. Texture is stratified sand and coarse sand.

Rainbow Series

The Rainbow series consists of very deep, moderately well drained loamy soils on till plains and drumlins. These soils formed in a silty mantle of eolian material overlying dense loamy glacial till. Slopes range from 3 to 8 percent.

Rainbow soils are commonly adjacent to well drained Broadbrook and Paxton soils. Paxton soils have coarser textures in the upper part. Rainbow soils are similar to Woodbridge soils, which have less silt and more sand in the solum.

A typical pedon of Rainbow silt loam is located in a polygon of Rainbow silt loam, 3 to 8 percent slopes, extremely stony, which is found 380 feet east of the junction of the towns of Hopkinton, Ashland, and Holliston, and 10 feet south of South Street (also West St. on some maps), in a partially wooded area of an abandoned field in the town of Holliston; USGS Holliston and Medfield topographic quadrangles; lat. 42 degrees 13 minutes 50 seconds N. and long. 71 degrees 27 minutes 57 seconds W., NAD83:

Ap—0 to 8 inches; dark brown (10YR 3/3) silt loam, light yellowish brown (10YR 6/4) dry; weak medium granular structure; friable; many fine, medium, and coarse roots; very strongly acid; abrupt smooth boundary.

Bw1—8 to 22 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; common medium roots; strongly acid; gradual wavy boundary.

Bw2—22 to 32 inches; yellowish brown (10YR 5/6) very fine sandy loam; massive; friable; common medium roots; common medium faint brownish yellow (10YR 6/6) masses of iron accumulation and many fine and medium prominent light brownish gray (2.5Y 6/2) redoximorphic depletions; moderately acid; abrupt wavy boundary.

BC—32 to 39 inches; light olive gray (5Y 6/2) gravelly sandy loam; massive; friable; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation; 15 percent gravel; 5 percent cobbles; moderately acid; gradual wavy boundary.

Cd—39 to 65 inches; olive (5Y 5/3) gravelly sandy loam; massive; firm; 20 percent gravel; 10 percent stones; moderately acid.

The thickness of the solum ranges from 18 to 40 inches. Rock fragments make up 0 to 20 percent by volume of the solum and 5 to 35 percent of the substratum. Soil reaction ranges from very strongly acid to moderately acid throughout.

The Ap horizon has hue of 10YR or 7.5YR and value and chroma of 2 to 4. Texture is silt loam.

The upper part of the Bw horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 4 to 6. The lower part of the Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The Bw horizons are silt loam, very fine sandy loam, or loam.

The BC horizon has hue of 2.5Y to 5Y, value of 5 or 6, and chroma of 2 or 3. Texture is fine sandy loam or sandy loam.

The Cd horizon has hue of 2.5YR to 5Y and value and chroma of 2 to 6. Texture is sandy loam, fine sandy loam, very fine sandy loam, or loam. Consistence is firm or very firm.

Raynham Series

The Raynham series consists of very deep, poorly drained soils on glacial lake plains and depressions in outwash plains. These soils formed in silty and loamy glaciolacustrine material. Slopes range from 0 to 5 percent.

Raynham soils are commonly adjacent to very poorly drained Birdsall and poorly drained Wareham soils. The Raynham soils are similar to Raypol soils, but the Raypol soils are more acid and overlie stratified sand and gravel at a depth of 18 to 40 inches. Wareham soils are sandier than Raynham soils.

A typical pedon of Raynham silt loam, 0 to 5 percent slopes, is located 1,500 feet northeast of the junction of Arlington and Methuen Streets and 1,120 feet northwest of the intersection of Pinckney and Methuen Streets, in an open area in the town of Dracut; USGS Lowell topographic quadrangle; lat. 42 degrees 39 minutes 56 seconds N. and long. 71 degrees 16 minutes 19 seconds W., NAD83:

Ap—0 to 8 inches; very dark brown (10YR 2/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium subangular blocky structure; friable; many fine roots; strongly acid; abrupt smooth boundary.

E—8 to 13 inches; olive (5Y 5/3) silt loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; moderately acid; clear smooth boundary.

Bg—13 to 33 inches; light olive gray (5Y 6/2) silt; weak medium subangular blocky structure; firm; few medium faint light yellowish brown (2.5Y 6/3) and common coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation; moderately acid; gradual wavy boundary.

Cg—33 to 65 inches; light olive gray (5Y 6/2) silt; massive; firm; few medium faint gray (5Y 5/1) redoximorphic depletions and common medium prominent yellowish brown (10YR 5/4 and 10YR 5/8) masses of iron accumulation; moderately acid.

The solum thickness ranges from 24 to 37 inches. The content of rock fragments ranges from 0 to 2 percent, by volume. Soil reaction ranges from strongly acid to neutral in the solum and moderately acid to neutral in the substratum.

The Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is silt loam.

The E horizon has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 1 to 3. Texture is silt loam or very fine sandy loam. Many pedons lack an E horizon.

The Bg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 or 3. The texture is silt, silt loam, or very fine sandy loam.

The Cg horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2. Texture is stratified silt, silt loam, or very fine sandy loam. The C horizon is friable or firm.

Raypol Series

The Raypol series consists of very deep, poorly drained soils in depressions on glacial outwash plains and low wet areas of glacial lake plains. These soils formed in loamy and silty glaciolacustrine material overlying stratified glaciofluvial material. Slopes range from 0 to 5 percent.

Raypol soils are commonly adjacent to moderately well drained Tisbury soils and very poorly drained Birdsall soils. Raypol soils are similar to Raynham soils, but Raynham soils are silty throughout the solum and substratum. Wareham soils are on similar landscape positions as the Raypol soils, but have a sandier surface.

A typical pedon of Raypol silt loam, 0 to 5 percent slopes, is located 575 feet northeast of the intersection of Weston Road and Conant Road, in an open field in the town of Lincoln; USGS Concord and Maynard topographic quadrangles; lat. 42 degrees 24 minutes 49 seconds N. and long. 71 degrees 17 minutes 54 seconds W., NAD83:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, yellowish brown (10YR 5/4) dry; weak fine granular structure; friable; many fine and very fine and common medium roots; strongly acid; abrupt smooth boundary.

Bw—9 to 19 inches; brown (10YR 5/3) silt loam; massive; friable; many fine and very fine roots; common coarse distinct very dark grayish brown (2.5Y 3/2) redoximorphic depletions along root channels; strongly acid; abrupt smooth boundary.

2C1—19 to 30 inches; dark grayish brown (10YR 4/2) very gravelly loamy sand; single grain; loose; many fine and very fine roots; common coarse prominent yellowish red (5YR 5/8) masses of iron accumulation; 40 percent gravel; strongly acid; gradual wavy boundary.

2C2—30 to 48 inches; dark grayish brown (10YR 4/2) very gravelly loamy sand; single grain; loose; many fine and very fine roots; few fine prominent yellowish red (5YR 5/8) masses of iron accumulation; 40 percent gravel; strongly acid; clear wavy boundary.

2C3—48 to 65 inches; dark grayish brown (10YR 4/2) very gravelly loamy sand; single grain; loose; 50 percent gravel; moderately acid.

The thickness of the solum ranges from 18 to 36 inches. Gravel content ranges from 0 to 10 percent by volume in the solum and from 10 to 50 percent in the substratum. Above 40 inches, soil reaction is very strongly acid or strongly acid. Below 40 inches, it ranges from strongly acid to slightly acid.

The Ap horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 2 or 3. Texture is silt loam.

The Bw horizon has hue of 10YR to 2.5Y, value of 4 to 6, and chroma of 1 to 4. Texture is silt loam and very fine sandy loam. Some pedons have thin layers of silt, fine sandy loam, very fine sand, or fine sand.

The 2C horizons have hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 4. They are stratified sand and gravel.

Ridgebury Series

The Ridgebury series consists of very deep, poorly drained soils in depressions, valleys, and on gently sloping areas of uplands. These soils formed in friable loamy eolian deposits overlying dense loamy glacial till. Slopes range from 3 to 8 percent.

Ridgebury soils are commonly adjacent to moderately well drained Woodbridge and Scituate soils, and very poorly drained Whitman soils (fig. 29). Scituate soils are higher on the landscape and have a sandy substratum.

A typical pedon of Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony, is located 600 feet south of Methuen Street, and 655 feet southwest of its intersection with Brigham Avenue, in the town of Dracut; USGS Lowell topographic quadrangle; lat. 42 degrees 39 minutes 37 seconds N. and long. 71 degrees 16 minutes 56 seconds W., NAD83:

A—0 to 7 inches; black (10YR 2/1) fine sandy loam, very dark grayish brown (10YR 3/2) dry; weak fine granular structure; very friable; many very fine and fine, common medium, and few coarse roots; 5 percent gravel; 3 percent cobbles; 3 percent stones; strongly acid; clear wavy boundary.

Bw—7 to 10 inches; brown (10YR 4/3) fine sandy loam; massive; very friable; common fine and few medium roots; few medium faint grayish brown (10YR 5/2) redoximorphic depletions and few medium prominent red (2.5YR 5/8) masses of iron accumulation; 5 percent gravel; 5 percent cobbles; 3 percent stones; strongly acid; clear wavy boundary.

Cdg1—10 to 25 inches; light brownish gray (2.5Y 6/2) sandy loam; weak medium subangular blocky structure; firm; few fine and very fine roots; few fine faint grayish brown (10YR 5/2) redoximorphic depletions and few fine prominent yellowish red (5YR 5/8) masses of iron accumulation; 10 percent gravel; 3 percent cobbles; strongly acid; gradual wavy boundary.

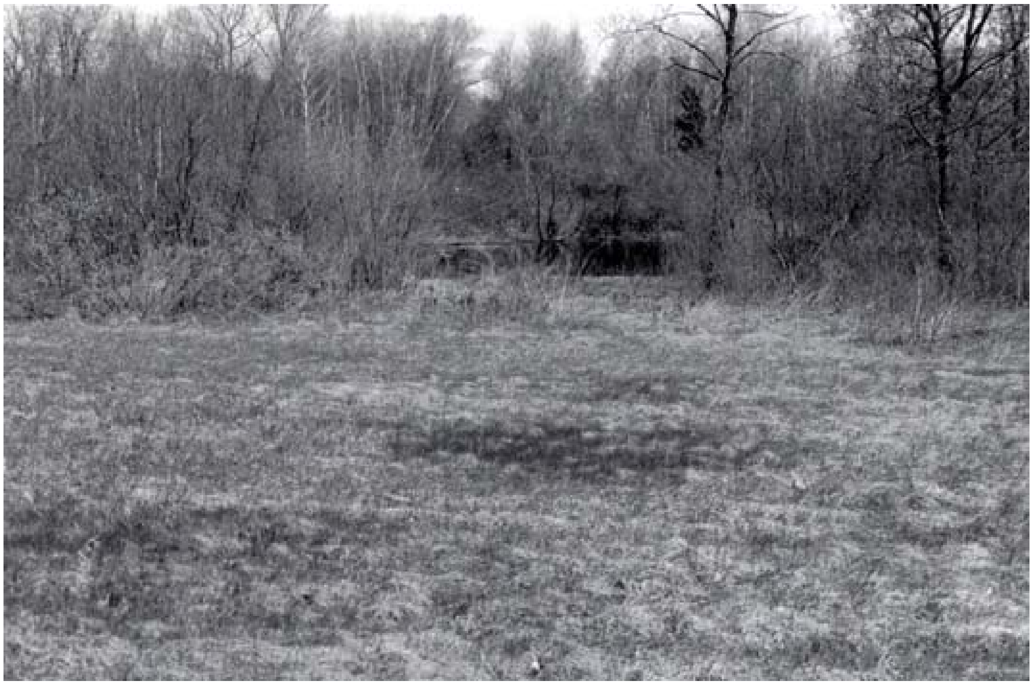

Figure 29.—A pond site surrounded by poorly drained Ridgebury soils. The dark area in the foreground is an indicator of the presence of very poorly drained Whitman soils.

Cdg2—25 to 32 inches; light brownish gray (2.5Y 6/2) sandy loam; massive; very firm; common fine and medium prominent yellowish red (5YR 5/8) masses of iron accumulation and common fine faint light gray (10YR 7/2) redoximorphic depletions; 10 percent gravel; 2 percent cobbles; moderately acid; gradual wavy boundary.

Cdg3—32 to 65 inches; gray (10YR 6/1) sandy loam; massive; very firm; many fine and medium prominent brownish yellow (10YR 6/6) masses of iron accumulation and common medium faint light brownish gray (10YR 6/2) redoximorphic depletions; 10 percent gravel; 2 percent cobbles; moderately acid.

The depth to the firm or very firm substratum ranges from 10 to 30 inches. Rock fragments range from 5 to 35 percent by volume throughout the soil. Reaction in unlimed areas is very strongly acid or strongly acid in the solum and strongly acid or moderately acid in the substratum.

The A horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 or 2. Texture is fine sandy loam.

The B horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 3. Texture is sandy loam, fine sandy loam, or loam.

The Cd horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. They are sandy loam, fine sandy loam, or loam. Consistence is firm to extremely firm.

Where Ridgebury soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is lower than that recognized for the series. In some pedons, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Where this soil is mapped in the northwestern section of the county in areas associated with schist, phyllite, and siltstone bedrock, there is more silt and less sand throughout the profile.

Rippowam Series

The Rippowam series consists of very deep, poorly drained soils on low terraces of floodplains along perennial streams and rivers. These soils formed in loamy alluvium overlying sandy and gravelly alluvium. Slopes range from 0 to 3 percent.

Rippowam soils formed in the same kind of parent material as, and are commonly adjacent to, moderately well drained Pootatuck soils. Rippowam soils are similar to Limerick soils, but Limerick soils have more silt and less sand in their upper 40 inches. Rippowam soils are adjacent to very poorly drained Saco soils, but Saco soils are on lower slopes in the landscape.

A typical pedon of Rippowam fine sandy loam, 0 to 3 percent slopes, is located 460 feet northwest of the intersection of Candice Lane and Townsend Road, 20 feet east of the Squannacook River, in a wooded area of an abandoned field in the town of Groton; USGS Shirley and Ayer topographic quadrangles; lat. 42 degrees 39 minutes 20 seconds N. and long. 71 degrees 38 minutes 40 seconds W., NAD83:

A thin layer of leaf and grass litter is found on the surface.

Ap—0 to 7 inches; black (10YR 2/1) fine sandy loam, light brownish gray (10YR 6/2) dry; granular; friable; many very fine and fine and common medium and coarse roots; strongly acid; abrupt smooth boundary.

Bg1—7 to 18 inches; dark gray (10YR 4/1) fine sandy loam; weak medium subangular blocky structure; friable; common very fine and fine and few medium roots; many medium prominent brown (7.5YR 5/4) masses of iron accumulation; moderately acid; clear wavy boundary.

Bg2—18 to 40 inches; dark grayish brown (10YR 4/2) sandy loam; massive; friable; few fine and medium roots; many medium distinct brown (7.5YR 4/4) masses of iron accumulation; moderately acid; abrupt wavy boundary.

Cg—40 to 65 inches; olive (5Y 4/3) fine sand and sand; massive; very friable; many medium faint olive gray (5Y 5/2) redoximorphic depletions; moderately acid.

Depth to stratified sand and fine sand ranges from 20 to 40 inches. Gravel content ranges from 0 to 15 percent by volume in the upper 40 inches and from 0 to 40 percent below 40 inches. Soil reaction ranges from very strongly acid to slightly acid throughout, with at least one subhorizon that is slightly acid or moderately acid within 40 inches of the surface.

The Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 or 2. Texture is fine sandy loam.

The Bg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. Texture is dominantly fine sandy loam, sandy loam, or loamy fine sand.

The Cg horizon has hue of 10YR to 5Y, value of 3 to 6, and chroma of 1 to 3. Texture is loamy fine sand, loamy sand, loamy coarse sand, fine sand, sand, coarse sand, or their gravelly analogs below 40 inches. Thin strata of very fine sandy loam, silt, silt loam, gravel, and/or organic material are present in some pedons.

Saco Series

The Saco series consists of very deep, very poorly drained soils at the lowest terrace levels on floodplains. These soils formed in silty alluvium with a high content of organic matter in the surface layer. Slopes range from 0 to 1 percent.

Saco soils are commonly adjacent to poorly drained Limerick soils. Saco soils are similar to Freetown and Swansea soils, though Freetown and Swansea soils have a thicker layer of organic material above the lithologic discontinuity.

A typical pedon of Saco mucky silt loam, 0 to 1 percent slopes, is located 200 feet east of Pine Street and 50 feet north of the Assabet River, in the West Concord section of the town of Concord; USGS Maynard topographic quadrangle; lat. 42

degrees 27 minutes 7 seconds N. and long. 71 degrees 23 minutes 34 seconds W., NAD83:

A—0 to 13 inches; very dark brown (10YR 2/2) mucky silt loam; massive; friable; many fine, very fine, medium, and coarse roots; strongly acid; abrupt wavy boundary.

Ab—13 to 20 inches; very dark gray (10YR 3/1) silt loam; massive; friable; common very fine and fine roots; common medium faint dark gray (10YR 4/1) redoximorphic depletions and few fine prominent brown (7.5YR 4/4) masses of iron accumulation; strongly acid; clear wavy boundary.

Cg1—20 to 30 inches; very dark grayish brown (10YR 3/2) silt loam; massive; friable; few very fine and fine roots; few fine faint very dark gray (10YR 3/1) redoximorphic depletions and many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid; clear wavy boundary.

Cg2—30 to 45 inches; grayish brown (2.5Y 5/2) silt loam; massive; friable; common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; moderately acid; abrupt smooth boundary.

2Cg3—45 to 65 inches; olive gray (5Y 5/2) loamy sand; single grain; loose; moderately acid.

Depth to the sandy substratum is more than 40 inches. The volume of coarse fragments ranges from 0 to 5 percent above a depth of 40 inches, and from 0 to 40 percent below 40 inches. Soil reaction ranges from strongly acid to slightly acid above a depth of 30 inches and moderately acid to neutral below 30 inches.

The A and the Ab horizons have hue of 7.5YR to 2.5Y, value of 2 or 3, and chroma of 1 to 3. They are mucky silt loam and silt loam.

The Cg horizons are neutral or have hue of 10YR to 5Y, value of 3 to 6, and chroma of 0 to 2. They have silt loam or very fine sandy loam above the lithologic discontinuity and loamy fine sand, loamy sand, fine sand, sand, coarse sand, or their gravelly analogs below.

In many pedons throughout the county, the depth to the coarse-textured substratum is less than 40 inches.

Scarboro Series

The Scarboro series consists of very deep, very poorly drained soils in depressions on glacial outwash plains and glacial stream terraces (fig. 30). These soils formed in sandy glaciofluvial material. Slopes range from 0 to 3 percent.

Scarboro soils are similar to Swansea, Birdsall and Wareham soils. However, Swansea soils have an organic layer that is greater than 16 inches. Birdsall soils have more silt and less sand throughout the solum and substratum, and Wareham soils are at slightly higher elevations, have high-chroma masses of iron accumulation in the B horizons, and have thinner surface horizons. Scarboro soils are adjacent to poorly drained Raypol soils, but Raypol soils have a more finely textured solum.

A typical pedon of Scarboro mucky fine sandy loam, 0 to 3 percent slopes, is located 600 feet southeast along Chestnut Street from its intersection with Park Street, and then 125 feet southwest of Chestnut Street, about 200 feet south of the Ipswich River, in the town of North Reading; USGS Reading topographic quadrangle; lat. 42 degrees 34 minutes 16 seconds N. and long. 71 degrees 5 minutes 47 seconds W., NAD83:

Oe—0 to 3 inches; very dark grayish brown (10YR 3/2) moderately decomposed organic material; weak medium granular structure; friable; many fine and common medium roots; strongly acid; clear smooth boundary.

A—3 to 11 inches; black (N 2/0) mucky fine sandy loam; massive; friable; common fine and medium roots; strongly acid; abrupt irregular boundary.

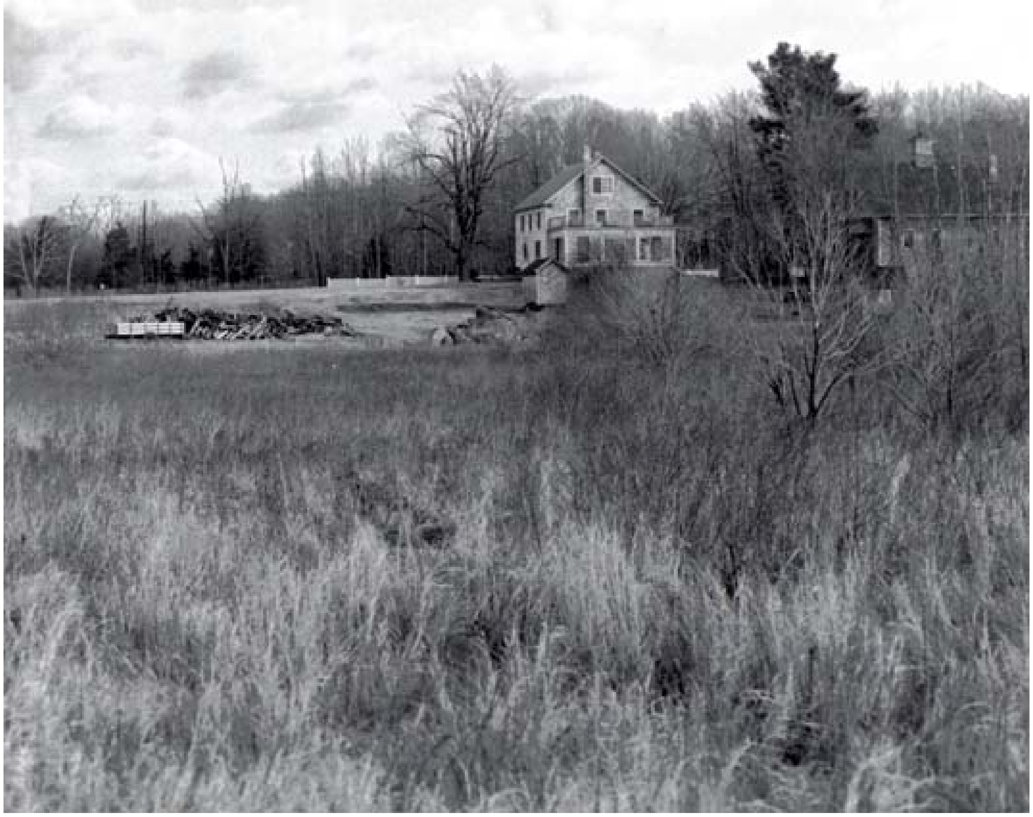

Figure 30.—An area of very poorly drained Scarboro soils is adjacent to a homesite on moderately well drained Scituate soils.

Cg1—11 to 21 inches; grayish brown (10YR 5/2) sand; massive in place breaking to single grain; loose; strongly acid; clear wavy boundary.

Cg2—21 to 29 inches; dark grayish brown (10YR 4/2) very gravelly coarse sand; single grain; loose; 35 percent gravel; strongly acid; clear wavy boundary.

Cg3—29 to 65 inches; dark gray (5Y 4/1) gravelly coarse sand; single grain; loose; 25 percent gravel; strongly acid.

The depth to sand and gravel ranges from 6 to 20 inches. Rock fragment content in the A horizon ranges from 0 to 10 percent by volume. Rock fragment content ranges from 0 to 20 percent in the C horizon above 30 inches, and from 0 to 50 percent below 30 inches. Soil reaction ranges from very strongly acid to moderately acid in the A and upper C horizons and from very strongly acid to slightly acid in the lower part of the C horizon.

The O horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 0 to 2. It is muck or mucky peat.

The A horizon is neutral or has hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 2. Texture is fine sandy loam or its mucky analog. Many pedons lack an A horizon.

The Cg horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 to 4. They are loamy fine sand, loamy sand, sand, loamy coarse sand, coarse sand, or their gravelly analogs.

Where Scarboro soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some pedons, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Scio Series

The Scio series consists of very deep, moderately well drained soils on low stream terraces and glacial lake plains. These soils formed in loamy and silty glaciolacustrine deposits. Slopes range from 0 to 8 percent.

Scio soils are similar to Sudbury soils, which have more sand throughout, and to Tisbury soils, which have more sand within 40 inches of the surface. Scio soils are adjacent to well drained Haven soils, which are on higher parts of the slope.

A typical pedon of Scio very fine sandy loam, 0 to 3 percent slopes, is located 1,000 feet south of Route 117 and 1,350 feet east of an abandoned Conrail track, in a field in the town of Sudbury; USGS Maynard topographic quadrangle; lat. 42 degrees 24 minutes 53 seconds N. and long. 71 degrees 23 minutes 54 seconds W., NAD83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) very fine sandy loam, yellowish brown (10YR 5/4) dry; moderate medium subangular blocky structure; friable; many very fine and fine and few medium and coarse roots; strongly acid; abrupt smooth boundary.

Bw1—8 to 22 inches; olive (5Y 5/3) very fine sandy loam; weak medium subangular blocky structure; friable; few very fine and fine roots; common medium and fine faint olive gray (5Y 5/2) redoximorphic depletions; strongly acid; abrupt smooth boundary.

Bw2—22 to 35 inches; olive (5Y 5/3) very fine sandy loam; weak medium subangular blocky structure; very friable; few very fine roots; few medium faint pale olive (5Y 6/4) masses of iron accumulation and few medium distinct grayish brown (10YR 5/2) redoximorphic depletions; strongly acid; abrupt wavy boundary.

C—35 to 65 inches; pale olive (5Y 6/3) silt loam; weak fine platy structure; very friable; few very fine roots; common coarse faint olive (5Y 5/3) masses of iron accumulation and few fine faint olive gray (5Y 5/2) redoximorphic depletions; 5 percent gravel; moderately acid.

Thickness of the solum ranges from 20 to 36 inches. The volume of coarse fragments ranges from 0 to 5 percent above 40 inches and from 5 to 60 percent below 40 inches. Soil reaction ranges from very strongly acid or strongly acid above 30 inches, and from strongly acid to moderately acid below 30 inches.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3. Texture is very fine sandy loam.

The Bw horizons have hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 3 to 6. They are silt loam or very fine sandy loam.

The C horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4. Texture is silt loam or very fine sandy loam above a depth of 40 inches. Below 40 inches, the soil is stratified silt loam to coarse sand or their gravelly analogs.

Where these soils are mapped in the Boston Basin, many pedons have more clay in the subsoil and substratum. Where these soils are mapped in the Concord and Sudbury River valleys, the solum is typically fine sandy loam to loamy sand.

Scituate Series

The Scituate series consists of very deep moderately well drained soils in wide drainage swales, depressions and gently sloping areas of ground moraine and drumlins. These soils formed in friable loamy eolian deposits overlying dense sandy and loamy glacial till. Slopes range from 3 to 15 percent.

Scituate soils are mapped in a drainage sequence with well drained Montauk and poorly drained Ridgebury soils. Ridgebury soils have finer textures in the substratum. Scituate soils are similar to Woodbridge soils, though Woodbridge has more silt and less sand in the substratum.

A typical pedon of Scituate fine sandy loam, 3 to 8 percent slopes, is located 3,400 feet north along Garrison Road, then 650 feet northeast from that point, and 600 feet southwest of Squannacook Road, at the edge of an open area in the town of Shirley; USGS Shirley and Ayer topographic quadrangles; lat. 42 degrees 36 minutes 29 seconds N. and long. 71 degrees 38 minutes 36 seconds W., NAD83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam, yellowish brown (10YR 5/4) dry; weak very fine granular structure in the upper part and weak very fine subangular blocky structure in the lower part; very friable; common very fine roots; 5 percent gravel; strongly acid; clear wavy boundary.

Bw1—8 to 13 inches; light olive brown (2.5Y 5/6) sandy loam; weak very fine granular structure; very friable; common very fine roots; 10 percent gravel; moderately acid; clear wavy boundary.

Bw2—13 to 20 inches; light yellowish brown (2.5Y 6/4) sandy loam; weak very fine subangular blocky structure; very friable; few very fine and fine roots; 10 percent gravel; moderately acid; clear wavy boundary.

C—20 to 27 inches; pale olive (5Y 6/3) loamy fine sand; weak very fine granular structure; friable; few fine roots; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; 10 percent gravel; moderately acid; clear wavy boundary.

2Cd—27 to 65 inches; olive gray (5Y 5/2) gravelly loamy sand; moderate thin platy structure; very firm; few very fine roots; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation; 20 percent gravel; moderately acid.

Thickness of the solum ranges from 18 to 34 inches. The volume of rock fragments ranges from 5 to 25 percent in the solum and from 10 to 35 percent in the substratum. Soil reaction ranges from extremely acid to moderately acid throughout.

The Ap horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is fine sandy loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 4 to 6 in the upper part, and hue of 10YR to 5Y and value and chroma of 4 to 6 in the lower part. The horizons are fine sandy loam or sandy loam.

The C horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 4. They are loamy sand, loamy fine sand, or loamy coarse sand. The consistence of the 2Cd horizon is firm or very firm.

Where Scituate soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some pedons, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Sudbury Series

The Sudbury series consists of very deep, moderately well drained soils on glacial outwash plains and terraces. These soils formed in loamy eolian material overlying loose sandy glaciofluvial material. Slopes range from 3 to 8 percent.

Sudbury soils are commonly adjacent to somewhat excessively drained Merrimac soils, and poorly drained Wareham soils. They are similar to Scio soils, which have less sand throughout.

A typical pedon of Sudbury fine sandy loam, 3 to 8 percent slopes, is located 700 feet east of the Nashua River and 150 feet south of Route 225, in the “Groton Woods” town forest in the town of Groton; USGS Ayer topographic quadrangle; lat. 42 degrees 36 minutes 17 seconds N. and long. 71 degrees 35 minutes 48 seconds W., NAD83:

A—0 to 8 inches; very dark brown (10YR 2/2) fine sandy loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common fine, medium, and coarse roots; strongly acid; abrupt wavy boundary.

Bw—8 to 20 inches; yellowish brown (10YR 5/6) fine sandy loam; massive; friable; strongly acid; gradual wavy boundary.

BC—20 to 27 inches; light olive brown (2.5Y 5/4) loamy sand; massive; very friable; common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation and distinct light brownish gray (2.5Y 6/2) redoximorphic depletions; 2 percent fine gravel; moderately acid; abrupt smooth boundary.

C1—27 to 30 inches; light yellowish brown (2.5Y 6/4) gravelly coarse sand; single grain; loose; many coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation; 25 percent gravel; moderately acid; clear wavy boundary.

C2—30 to 37 inches; light olive brown (2.5Y 5/4) sand; single grain; loose; moderately acid; abrupt wavy boundary.

C3—37 to 65 inches; light olive brown (2.5Y 5/4) gravelly coarse sand; single grain; firm in place breaking to loose in the upper part, loose in the lower part; many medium prominent yellowish brown (10YR 5/8) masses of iron accumulation in the upper part, and many medium distinct light olive gray (5Y 6/2) redoximorphic depletions in the lower part; 25 percent gravel; 10 percent cobbles; moderately acid.

The solum thickness ranges from 18 to 30 inches. Rock fragments of gravel and small cobbles comprise up to 20 percent of the solum by volume. The substratum has 5 to 50 percent gravel and 5 to 15 percent cobbles by volume. Soil reaction ranges from very strongly acid to moderately acid.

The A horizon has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 2 or 3. Texture is fine sandy loam.

The Bw and BC horizons have hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 4 to 8. The Bw horizon is fine sandy loam or sandy loam. The BC horizon is sandy loam, loamy fine sand, loamy sand, loamy coarse sand, or fine sand.

The C horizons have hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 6. They are stratified sand and gravel.

Where Sudbury soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is lower than that recognized for the series. In some areas, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Suncook Series

The Suncook series consists of very deep, excessively drained soils on sand bars and small knolls of floodplains bordering major rivers. These soils formed in sandy alluvium. Slopes range from 0 to 3 percent.

Suncook soils are similar to Occum and Windsor soils, though Occum soils have less sand and more silt in the upper 40 inches, and Windsor soils formed in glaciofluvial material, and are not subject to flooding.

A typical pedon of Suncook loamy sand, 0 to 3 percent slopes, is located 2,390 feet southwest of the intersection of Proctor Road and Harbor Street, 1,900 feet south-southeast of the intersection of Edward Road and Main Street, and 25 feet east of the Squannacook River, in the town of Townsend; USGS Townsend topographic quadrangle; lat. 42 degrees 38 minutes 49 seconds N. and long. 71 degrees 39 minutes 50 seconds W., NAD83:

A thin layer of undecomposed oak and pine leaf litter is found on the surface.

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) loamy sand; single grain, with some weak fine granular structure around roots; loose; many very fine and fine roots; strongly acid; abrupt smooth boundary.

C1—6 to 24 inches; dark yellowish brown (10YR 3/4) coarse sand; single grain; loose; common very fine and fine roots; strongly acid; abrupt smooth boundary.

C2—24 to 45 inches; light yellowish brown (2.5Y 6/4) sand; single grain; loose; few very fine and fine roots; moderately acid; abrupt smooth boundary.

C3—45 to 65 inches; light olive brown (2.5Y 5/4) coarse sand; single grain; loose; few very fine roots; moderately acid.

Gravel content ranges from 0 to 10 percent by volume in the upper 20 inches, from 0 to 20 percent from 20 to 40 inches, and from 0 to 40 percent below 40 inches. Soil reaction ranges from very strongly acid to slightly acid throughout.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 3. Texture is loamy sand.

The C horizons have hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 1 to 4. They are stratified loamy fine sand, loamy sand, loamy coarse sand, fine sand, sand, or coarse sand. Many pedons have thin layers of buried organic material.

Swansea Series

The Swansea series consists of very deep, very poorly drained organic soils in swampy depressions of uplands and glacial outwash plains. These soils formed in 16 to 51 inches of highly decomposed organic material overlying sandy glaciofluvial material. Slopes range from 0 to 1 percent.

Swansea soils are similar to Freetown, Saco and Scarboro soils. Freetown soils have organic material that is deeper than 51 inches, while Saco soils have less than 16 inches of organic material overlying mineral alluvium. The Scarboro soils have an organic surface layer that is less than 16 inches deep, overlying sandy glaciofluvial material. Birdsall soils are on similar landscape positions as the Swansea soils, but are silty mineral soils.

A typical pedon of Swansea muck, 0 to 1 percent slopes, is located on the west side of the Boston and Maine rail line, 200 feet south of Route 2A and 2,000 feet east of the junction of Route 2A and Bruce Road in the Pingryville section of the town of Littleton; USGS Townsend topographic quadrangle; lat. 42 degrees 33 minutes 2 seconds N. and long. 71 degrees 31 minutes 42 seconds W., NAD83:

Oa1—0 to 8 inches; black (N 2/0) broken face muck; black (5YR 2.5/1) rubbed; 7 percent fiber; weak fine granular structure; very friable; many fine roots; woody fiber; extremely acid; clear smooth boundary.

Oe1—8 to 12 inches; dark reddish brown (5YR 3/2) broken face muck; dark reddish brown (5YR 3/3) rubbed; 65 percent fiber, 30 percent rubbed; weak coarse subangular blocky structure; friable; many fine roots; woody fiber; extremely acid; clear smooth boundary.

Oa2—12 to 17 inches; dark reddish brown (5YR 2.5/2) broken face muck; dark reddish brown (5YR 3/2) rubbed; 7 percent fiber, 4 percent rubbed; massive; friable; few fine roots; woody fiber; extremely acid; clear smooth boundary.

Oa3—17 to 23 inches; dark reddish brown (5YR 3/2) broken face muck; dark reddish brown (5YR 3/4) rubbed; 7 percent fiber, 4 percent rubbed; massive; friable; few fine roots; woody fiber; extremely acid; clear smooth boundary.

2Cg1—23 to 37 inches; gray (5Y 5/1) loamy fine sand; single grain; loose; common coarse prominent reddish brown (5YR 5/3) and brown (10YR 4/3) masses of iron accumulation; very strongly acid; clear smooth boundary.

2Cg2—37 to 65 inches; gray (5Y 5/1) gravelly sand; single grain; loose; common coarse prominent reddish brown (5YR 5/3) and brown (10YR 5/3) masses of iron accumulation; 15 percent gravel; very strongly acid.

The depth to the mineral material is 16 to 51 inches. Woody fragments in the O horizons are 1/2 inch to 1 foot or more in diameter. Soil reaction is extremely acid in the organic layers, and extremely acid to strongly acid in the 2C horizon.

The surface tier is neutral or it has hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 2. It is dominantly sapric material.

The subsurface and bottom tiers have hue of 5YR to 10YR, value of 2 or 3, and chroma of 0 to 3.

The 2C horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 3. They are loamy coarse sand, loamy sand, loamy fine sand, fine sand, sand, or coarse sand. Gravel content ranges from 0 to 40 percent. Many pedons have thick ortstein layers in the upper part of the C horizon.

Tisbury Series

The Tisbury series consists of very deep, moderately well drained soils in depressions and broad drainageways of glacial outwash plains and terraces. These soils formed in friable loamy eolian material overlying loose sandy glaciofluvial material. Slopes range from 0 to 8 percent.

Tisbury soils are commonly adjacent to well drained Haven and poorly drained Raypol and Wareham soils. Wareham soils have a sandier solum than the Tisbury soils. The Tisbury soils are similar to Scio soils, which lack sandy material within 40 inches of the surface.

A typical pedon of Tisbury silt loam, 0 to 3 percent slopes, is located 1,150 feet east of Long Meadow Road and 1,000 feet north of Old Sudbury Road, in a crop field in the town of Lincoln; USGS Concord and Maynard topographic quadrangles; lat. 42 degrees 24 minutes 10 seconds N. and long. 71 degrees 19 minutes 55 seconds W., NAD83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, dark yellowish brown (10YR 4/6) dry; weak fine granular structure; very friable; many very fine and fine, common medium, and few coarse roots; very strongly acid; abrupt smooth boundary.

Bw1—8 to 14 inches; yellowish brown (10YR 5/6) very fine sandy loam; massive; very friable; common very fine and fine and few medium roots; moderately acid; clear wavy boundary.

Bw2—14 to 21 inches; olive yellow (2.5Y 6/6) very fine sandy loam; massive; friable; common very fine and fine and few medium roots; moderately acid; clear wavy boundary.

Bw3—21 to 28 inches; olive yellow (2.5Y 6/6) very fine sandy loam; massive; friable; common very fine and fine and few medium roots; few fine prominent reddish yellow (7.5YR 6/8) and yellowish red (5YR 5/8) masses of iron accumulation, and common medium prominent light gray (2.5Y 7/2) redoximorphic depletions; moderately acid; clear wavy boundary.

BC—28 to 34 inches; light yellowish brown (2.5Y 6/4) very fine sandy loam; massive; friable; few very fine and fine roots; few medium distinct light gray (2.5Y 7/2) redoximorphic depletions; 10 percent gravel; moderately acid; abrupt smooth boundary.

2C1—34 to 44 inches; brownish yellow (10YR 6/6) very gravelly sand; single grain; loose; few very fine roots; 40 percent gravel; 5 percent cobbles; moderately acid; gradual wavy boundary.

2C2—44 to 65 inches; light yellowish brown (2.5Y 6/4) very gravelly sand; single grain; loose; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation; 35 percent gravel; 5 percent cobbles; moderately acid.

The solum thickness ranges from 20 to 40 inches. Gravel content ranges from 0 to 5 percent by volume in the solum and from 0 to 50 percent in the substratum. Soil reaction ranges from very strongly acid to moderately acid throughout.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3. Texture is silt loam.

The upper part of the B horizons has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 3 to 6. The lower parts of the B horizons have hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 4 to 6. They are silt loam or very fine sandy loam to a depth of 20 to 40 inches.

The 2C horizons have hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 6. They are coarse sand, sand, fine sand, loamy coarse sand, or loamy sand. The material may be stratified.

Udorthents

Udorthents consist of areas from which soil has been excavated and areas where soil material has been deposited for development projects. Udorthents are near or adjacent to Canton, Merrimac, and Paxton soils and to urban land. Because of the extreme variability of Udorthents, a reference pedon is not given.

The content of coarse fragments ranges from 0 to 95 percent throughout. Soil reaction ranges from very strongly acid to neutral.

The O horizon, where present, has hue of 10YR or 7.5YR, value of 2 or 3, and chroma of 0 to 3.

The A horizon where present, has hue of 10YR to 5Y, value of 3 or 4, and chroma of 1 to 3. Texture is very fine sandy loam, fine sandy loam, or sandy loam.

The C horizons have hue of 10YR to 5Y, value of 2 to 6, and chroma of 0 to 6. They are fine sandy loam, sandy loam, or loamy sand.

In many areas, Udorthents have strata of loamy fine sand to coarse sand.

Wareham Series

The Wareham series consists of very deep, poorly drained soils in low-lying areas of glacial outwash plains, deltas, and stream terraces. These soils formed in loose sandy glaciofluvial material. Slopes range from 0 to 5 percent.

Wareham soils are commonly adjacent to moderately well drained Deerfield and Sudbury soils. Wareham soils are similar to Scarboro soils, though Scarboro soils have more organic matter in the A horizon and a grayer substratum.

A typical pedon of Wareham loamy fine sand, 0 to 5 percent slopes, is located 450 feet north of the overpass of Trull Road over I-495, and 1,060 feet southwest of the intersection of Trull Road and Dickson Ave., on a flat area in the town of Tewksbury; USGS Lowell topographic quadrangle; lat. 42 degrees 37 minutes 59 seconds N. and long. 71 degrees 15 minutes 38 seconds W., NAD83:

Ap—0 to 10 inches; black (10YR 2/1) loamy fine sand, very dark grayish brown (10YR 3/2) dry; weak fine and medium granular structure; very friable; many very fine and common fine and medium roots; strongly acid; abrupt smooth boundary.

Bw—10 to 24 inches; brown (10YR 5/3) loamy sand; single grain; very friable; few fine roots; many medium faint dark yellowish brown (10YR 4/4) masses of iron accumulation and few medium faint grayish brown (10YR 5/2) redoximorphic depletions; strongly acid; gradual smooth boundary.

C1—24 to 34 inches; light brownish gray (10YR 6/2) stratified fine and medium sand; massive; very friable; common coarse faint grayish brown (10YR 5/2) redoximorphic depletions and common fine and medium prominent strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid; clear wavy boundary.

C2—34 to 65 inches; light brownish gray (10YR 6/2) stratified medium and coarse sand; massive; very friable; few medium faint grayish brown (10YR 5/2) redoximorphic depletions and few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid.

The solum thickness ranges from 6 to 30 inches. Rock fragments of gravel range from 0 to 15 percent by volume to 40 inches in depth. Below 40 inches, the gravel content ranges from 0 to 60 percent and cobbles range from 0 to 3 percent. Soil reaction ranges from extremely acid to strongly acid throughout.

The Ap horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2. Texture is loamy fine sand.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 1 to 4. Texture is loamy fine sand, loamy sand, loamy coarse sand, fine sand, sand, or coarse sand.

The C horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 3. They are loamy sand, loamy coarse sand, fine sand, medium sand, or coarse sand.

In many areas throughout the survey area, the solum textures are sandy loam or fine sandy loam.

Whitman Series

The Whitman series consists of very deep, very poorly drained soils in low-lying wet upland areas. These soils formed in friable loamy eolian deposits overlying dense loamy glacial till. Slope ranges from 0 to 5 percent.

Whitman soils are commonly adjacent to poorly drained Ridgebury soils and moderately well drained Woodbridge soils. Birdsall soils have a silty solum.

A typical pedon of Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony, is located south of Westford Road, 1,600 feet northeast of the Route 3 overpass and 275 feet south-southeast towards the Sportsmen's Club pond, in the town of Tyngsborough; USGS Nashua South and Lowell topographic quadrangles; lat. 42 degrees 39 minutes 44 seconds N. and long. 71 degrees 25 minutes 27 seconds W., NAD83:

A—0 to 10 inches; very dark gray (10YR 3/1) fine sandy loam, gray (10YR 6/1) dry; weak medium and fine subangular blocky structure; friable; many very fine, common fine, and few coarse roots; 5 percent gravel; 5 percent cobbles; 3 percent stones; very strongly acid; gradual wavy boundary.

BA—10 to 14 inches; dark grayish brown (10YR 4/2) sandy loam; weak medium and fine subangular blocky structure; friable; many very fine, common fine, and few medium roots; few fine and medium faint grayish brown (10YR 5/2) redoximorphic depletions and few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; 8 percent gravel; 3 percent cobbles; 3 percent stones; strongly acid; clear wavy boundary.

Bwg—14 to 18 inches; light brownish gray (10YR 6/2) sandy loam; weak medium subangular blocky structure; friable; few very fine and fine roots; few medium and fine faint dark grayish brown (10YR 4/2) redoximorphic depletions; 8 percent gravel; 5 percent cobbles; strongly acid; gradual wavy boundary.

Cdg1—18 to 29 inches; light brownish gray (2.5Y 6/2) gravelly sandy loam; massive; very firm; few very fine and fine roots; common medium and fine prominent strong brown (7.5YR 5/6) masses of iron accumulation; 15 percent gravel; 5 percent stones; moderately acid; diffuse smooth boundary.

Cdg2—29 to 65 inches; light brownish gray (2.5Y 6/2) gravelly sandy loam; massive; very firm; many coarse, medium and fine prominent yellowish red (5YR 5/6) masses of iron accumulation; 10 percent gravel; 5 percent cobbles; 5 percent stones; moderately acid.

The thickness of the solum ranges from 12 to 19 inches. The volume of rock fragments ranges from 5 to 25 percent in the solum and substratum. Soil reaction ranges from very strongly acid to slightly acid throughout.

The A horizon is neutral or has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is fine sandy loam or its mucky analog.

The B and the BA horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. They are loam, sandy loam, or fine sandy loam.

The Cd horizons have hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. They are fine sandy loam or sandy loam. Their consistence is firm or very firm.

Where Whitman soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some areas, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Windsor Series

The Windsor series consists of very deep, excessively drained soils on outwash plains, terraces and deltas (fig. 31). These soils formed in sandy glaciofluvial material. Slopes range from 0 to 15 percent.

The Windsor soils are similar to Deerfield, Hinckley, and Carver soils. However, Deerfield soils have masses of iron accumulation in the B horizon, Hinckley soils have more gravel in the solum and substratum, and Carver soils have coarser sand throughout. Windsor soils are adjacent to somewhat excessively drained Merrimac soils, which have a finer texture in the solum.

A typical pedon of Windsor loamy sand, 8 to 15 percent slopes, is located about 1,450 feet south of the New Hampshire state line, 500 feet north of Jones Hill Road, and 1,000 feet east of West Road, in the town of Ashby; USGS Ashby and Ashburnham topographic quadrangles; lat. 42 degrees 42 minutes 22 seconds N. and long. 71 degrees 51 minutes 22 seconds W., NAD83:

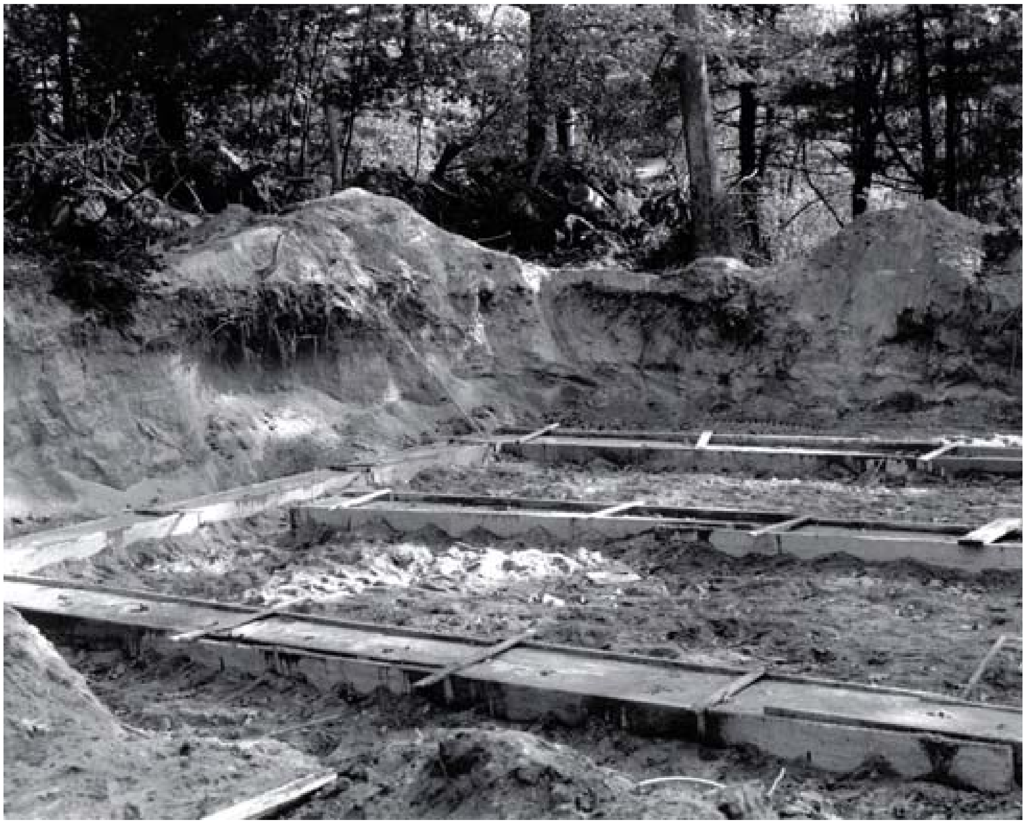

Figure 31.—A homesite being developed in Windsor soils.

A—0 to 8 inches; dark brown (10YR 3/3) loamy sand, light yellowish brown (10YR 6/4) dry; weak fine granular structure; very friable; many medium and fine and common very fine roots; 5 percent gravel; moderately acid; abrupt smooth boundary.

Bw1—8 to 16 inches; yellowish brown (10YR 5/6) loamy sand; single grain; loose; few very fine and fine roots; 5 percent gravel; moderately acid; abrupt wavy boundary.

Bw2—16 to 23 inches; light olive brown (2.5Y 5/4) sand; single grain; loose; few very fine and fine roots; moderately acid; abrupt wavy boundary.

C1—23 to 30 inches; light yellowish brown (2.5Y 6/4) gravelly sand; single grain; loose; few very fine and fine roots; 15 percent gravel; moderately acid; abrupt smooth boundary.

C2—30 to 65 inches; light yellowish brown (2.5Y 6/4) sand; single grain; loose; moderately acid.

The thickness of the solum ranges from 20 to 32 inches. Gravel content ranges from 0 to 10 percent by volume in the solum and from 0 to 15 percent in the substratum. Soil reaction ranges from very strongly acid to moderately acid in the solum and from strongly acid to slightly acid in the substratum.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 1 to 3. Texture is loamy sand.

The upper Bw horizon has hue of 7.5 YR or 10YR, value of 4 to 6, and chroma of 4 to 8. The lower Bw horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 to 6. This horizon is loamy fine sand or loamy sand in the upper part, and loamy fine sand, loamy sand, fine sand, or sand in the lower part.

The C horizons have hue of 10YR to 5Y, value of 5 to 7, and chroma of 2 to 6. They are fine sand or sand.

Where Windsor soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some areas, soil profile characteristics reflect the colder climate. The variations do not affect the usefulness or behavior of the soil.

Winooski Series

The Winooski series consists of very deep, moderately well drained soils on floodplains of major streams. These soils formed in recent silty and loamy alluvium. Slopes range from 0 to 3 percent.

Winooski soils are commonly adjacent to poorly drained Limerick soils. They are similar to Pootatuck soils, which have more sand and less silt in the solum.

A typical pedon of Winooski very fine sandy loam, 0 to 3 percent slopes, is located 3,500 feet southwest along the railroad tracks from White Pond Road, and thence 140 feet north, to a point 150 feet south of the Assabet River, in the town of Stow; USGS Maynard topographic quadrangle; lat. 42 degrees 25 minutes 4 seconds N. and long. 71 degrees 29 minutes 9 seconds W., NAD83:

A thin layer of undecomposed leaf litter is found on the surface.

A—0 to 6 inches; dark brown (10YR 3/3) very fine sandy loam, yellowish brown (10YR 5/4) dry; weak medium granular structure; friable; few coarse roots; strongly acid; abrupt smooth boundary.

C1—6 to 12 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; weak medium granular structure; friable; few coarse roots; strongly acid; clear wavy boundary.

C2—12 to 16 inches; yellowish brown (10YR 5/4) very fine sandy loam; massive; very friable; few fine roots; strongly acid; clear smooth boundary.

C3—16 to 20 inches; yellowish brown (10YR 5/4) very fine sandy loam; massive; very friable; few fine roots; common medium distinct light olive brown (2.5Y 5/6) and faint dark yellowish brown (10YR 4/4) masses of iron accumulation and distinct grayish brown (2.5Y 5/2) redoximorphic depletions; strongly acid; clear smooth boundary.

C4—20 to 65 inches; light olive brown (2.5Y 5/4) very fine sandy loam; massive; very friable; common medium distinct light olive brown (2.5Y 5/4) and faint dark yellowish brown (10YR 4/4) masses of iron accumulation, and distinct grayish brown (2.5Y 5/2) redoximorphic depletions; moderately acid.

The gravel content ranges from 0 to 5 percent by volume throughout the soil. Soil reaction ranges from very strongly acid to neutral throughout, with at least one horizon above a depth of 40 inches being moderately acid, slightly acid, or neutral.

The A horizon has hue of 10YR to 5Y, value of 3 or 4, and chroma of 2 or 3. Texture is very fine sandy loam.

The C horizons have hue of 10YR to 5Y, value of 3 to 6, and chroma of 2 to 4. They are silt loam, very fine sandy loam, or loamy very fine sand. Some pedons have thin layers of very fine sand, fine sand, or sand below 40 inches.

Woodbridge Series

The Woodbridge series consists of very deep, moderately well drained soils on drumlins. These soils formed in friable, loamy eolian deposits overlying dense loamy glacial till. Slopes range from 0 to 15 percent.

Woodbridge soils are commonly adjacent to well drained Paxton soils and poorly drained Ridgebury soils. They are similar to Scituate soils, which have more sand and less silt in the substratum.

A typical pedon of Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony, is located 1,000 feet north of Route 2A/110, at a point 2,100 feet east-northeast of the intersection of Route 2A/110 and Snake Hill Road, in the town of Ayer; USGS Ayer topographic quadrangle; lat. 42 degrees 33 minutes 4 seconds N. and long. 71 degrees 32 minutes 59 seconds W., NAD83:

Oe—0 to 2 inches; black (N 2/0) moderately decomposed organic material; weak fine granular structure; friable; many very fine and fine roots; very strongly acid; clear smooth boundary.

A—2 to 4 inches; very dark brown (10YR 2/2) fine sandy loam; granular; friable; common fine and medium roots; 2 percent gravel; 3 percent cobbles; strongly acid; abrupt wavy boundary.

Bw1—4 to 18 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; friable; few fine and common coarse roots; 5 percent gravel; 2 percent cobbles; 5 percent stones; moderately acid; clear wavy boundary.

Bw2—18 to 30 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; friable; few fine roots; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation, many coarse distinct light brownish gray (2.5Y 6/2) redoximorphic depletions, and few medium prominent yellowish red (5YR 5/8) masses of iron accumulation; 5 percent gravel; 2 percent cobbles; 5 percent stones; strongly acid; abrupt smooth boundary.

Cd—30 to 65 inches; light olive brown (2.5Y 5/4) fine sandy loam; moderate medium platy structure; firm; few fine roots; common fine prominent strong brown (7.5YR 5/8) and few fine prominent yellowish red (5YR 5/8) masses of iron accumulation, and common medium distinct light brownish gray (2.5Y 6/2) redoximorphic depletions; 2 percent gravel; 5 percent stones; strongly acid.

Thickness of the solum ranges from 18 to 36 inches. The rock fragment content of gravel, cobbles, and stones ranges from 5 to 25 percent by volume in the solum and substratum. Soil reaction ranges from very strongly acid to moderately acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. Texture is fine sandy loam.

The Bw horizons have hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma 4 to 6. They are sandy loam, fine sandy loam, or loam.

The Cd horizon has hue of 2.5Y or 5Y, value of 4 to 6, and chroma of 2 to 4. Texture is sandy loam, fine sandy loam, or loam. Consistence is firm or very firm.

Where Woodbridge soils occur at elevations above 1,000 feet in Ashby and western Townsend, the average annual soil temperature is slightly lower than that recognized for the series. In some pedons, soil profile characteristics reflect the colder climate. These variations do not affect the usefulness or behavior of the soil.

Formation of the Soils

Soils are formed through the action of parent material, climate, topography, plant and animal life and the activities of humans, and time. The relative influence of each of these factors varies in different locations. In Middlesex County, differences among named soils are largely the result of differences in parent material and topographic position.

The soils of Middlesex County have developed in the period since glaciation. They have undergone little weathering compared to soils in unglaciated areas, and display weak soil horizon development. This section describes the five major factors of soil formation and the effect of each on the soils in the survey area.

Parent Material

Parent material is the unconsolidated mineral deposits in which a soil develops. This material determines the soil's mineralogical composition and contributes largely to its physical and chemical characteristics. The kind of parent material can also influence the rate at which soil-forming processes take place. Soil scientists have identified five major kinds of parent material in this survey area: glacial till, stratified drift, lacustrine and fluviolacustrine sediments, recent alluvium, and organic deposits.

Glacial till consists predominantly of unsorted and unstratified sediments deposited from glacial ice. Till is a heterogeneous mixture of boulders, stones, gravel, sand, silt, and clay. The till in this survey area is mostly a mixture of stones, gravel, sand, and silt and is mainly less than 5 percent clay, though the till in the Boston Basin has higher clay content.

Two broad groupings of till have been observed in the survey area: basal till and ablation till. Basal, or lodgement, till is deposited beneath glaciers as they advance or retreat and is characterized by a dense, firm, olive gray substratum with a loamy texture. Paxton soils, for example, formed in this parent material. Ablation till is deposited from melting ice and is laid down upon bedrock or upon other surficial deposits. The ablation till in this survey area generally has a coarse texture dominated by sand, gravel, cobbles, and stones, and has a loose, permeable substratum. Canton soils, for example, formed in this parent material.

Stratified drift, or glacial outwash, is a deposit that is transported and laid down by glacial meltwater. This broad category of material can be further subdivided depending on the location, velocity, or duration of the meltwater flow. The materials generally consist of a substratum of stratified sand and gravel commonly covered with weathered loamy or sandy subsoil and surface layers. This parent material is associated with major stream valleys. Hinckley, Merrimac, and Sudbury soils are examples of soils that formed from this parent material. Because of the mode of deposition, soils that developed on stratified drift have complex boundary lines.

Lacustrine and fluviolacustrine sediments are stratified deposits of sand, silt, and clay. These deposits settled out in glacial lakes that then drained, leaving nearly level plains having depressions and generally poor internal drainage. Lacustrine and fluviolacustrine sediments in the area consist chiefly of stratified sands and silt. Raynham and Scio soils are examples of soils that formed in these parent materials.

As ocean levels receded following glaciation, marine sediments were exposed which remain as low plains along the present coast of Massachusetts Bay. These deposits generally are at elevations as high as 50 feet above sea level and grade gently to sea level. In the survey area, marine deposits consist chiefly of stratified fine sand, silt, and clay. Areas where marine parent materials occur have been included in mapping with the Scio soils.

Recent alluvium consists of sediments deposited by existing streams and rivers, and occurs on terraces above streams or in normally-flooded bottom land and basins. Alluvium consists of layers of gravel, sand, silt, clay, and organic material in various arrangements. Recent alluvium in Middlesex County is generally sandy or silty and has a large amount of organic matter on the surface. This material has been deposited in recent time and lacks soil profile development. The Saco and Rippowam soils formed in recent alluvium.

Organic deposits are accumulations of plant material, generally more than 16 inches in depth, in various stages of decomposition, in wetlands. Freetown and Swansea soils formed in highly decomposed organic material derived from woody and herbaceous plants, and are found in inland swamps and marshes.

Climate

The kind of climate under which a soil forms largely determines the nature and rate of physical and chemical weathering of parent materials. Climate directly affects the type of vegetation in an area, which in turn affects those soil forming processes related to plant life. Moderate temperatures in the survey area allow the accumulation of organic matter in the surface layer of most soils. Rainfall leaches water-soluble minerals down through the soil, which results locally in acid soils. Cold temperatures in winter combined with high moisture create frost action, which is especially active in loamy soils that are not under forest vegetation. Frost action breaks apart rock fragments and influences soil structure.

Topography

The shape of the land surface, the slope, and the position of the soil on the landscape, are dominant factors in differentiating soil types in Middlesex County.

Soils that formed in identical parent materials and under the same climatic conditions exhibit differences because of their position on the landscape. These differences are largely characterized by variations in wetness resulting from surface runoff or depth to a water table.

Soils that formed at higher elevations and on sloping areas are typically excessively drained or well drained. Depth to groundwater is generally more than 6 feet, and surface runoff is moderate or rapid. Soil profiles commonly are a bright strong brown to yellowish brown, grading to a lighter, grayer, unweathered substratum.

Soils at lower elevations, such as those in swales and depressions, or adjacent to drainage ways and water bodies, receive surface runoff from higher elevations and have a seasonal high water table at a shallow depth. These soils are typically poorly drained and very poorly drained. Poorly drained soils have a strongly-mottled or gray matrix in the solum. In very poorly drained areas, where the water table is at or near the surface for prolonged periods, the surface layer of soil is typically a dark brown or black, organic or organic-rich material overlying a gleyed subsoil and substratum.

Moderately well drained soils typically lie between the poorly drained and well drained soils. They have a yellowish-brown matrix with gray mottles in the solum.

Plant and Animal Life and the Activities of Humans

All living things influence the soil-forming process. Micro-organisms such as bacteria, fungi, actinomycetes, algae, and protozoa are actively at work in the surface layer of most soils. These organisms are constantly recycling organic materials and minerals, which in turn are used by plants. The dark brown surface layer in most soils is attributable to the activities of these organisms. Larger animals such as earthworms, woodchucks, and moles mix the soil and change its physical characteristics, rendering the soil more permeable to air and water. Their waste products aid aggregation of soil particles, improve soil structure, and help conserve nutrients in a less-mobile state. The native forest of Middlesex County is a mixture of coniferous and hardwood trees, and the mineral content of their leaves and branches influences the soils which develop beneath them. Hardwood trees such as red oak take up bases (calcium, magnesium, and potassium) from the soil, which are eventually returned to the soil surface as litter in a very efficient cycle. Conifers such as white pines tend to take up fewer bases than hardwoods; consequently, soils beneath conifers tend to be more acid because the bases are leached through the soil. In places where trees are shallow-rooted because of a high water table or an impermeable layer, windthrow is common. Tree-throw results in deeper mixing and an irregular boundary between the surface layer and subsoil. Soils that have been in grass for long periods usually develop a thicker, darker, surface layer, which has a higher moisture-holding capacity and higher cation-exchange capacity than similar soils developed under forest vegetation.

Human activities have significantly altered many areas of natural soil in Middlesex County. A distinct plow layer in many soils is evidence of mechanical cultivation and additions of organic matter, lime, and fertilizer. Artificial drainage and filling have altered some naturally-wet soils. In urban areas natural soil has been covered, removed, or replaced. Udorthents, loamy; Udorthents, sandy; and Udorthents, wet substratum, are soils which have been altered by human activities.

Time

The soils of Middlesex County have developed in the roughly 10,000 years since glaciation. They have undergone little weathering compared to soils in unglaciated areas, and display weak soil horizon development.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha-alpha-Dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a reduction condition which is used as a redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Atterberg limits. The collective designation of seven so-called limits of consistency of fine-grained soils. Current usage retains only the liquid limits, the plastic limit, and the plasticity number or index.

AUM. See Animal unit month.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 40-inch profile or to a limiting layer is expressed as:

Very low	0 to 2.4
Low	2.5 to 2.9
Moderate	3.0 to 5.9
High	6.0 to 9.0
Very high	more than 9.1

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape, that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Cement rock. Shaly limestone used in the manufacture of cement.

Cemented pan. Very firm soil layer wherein the particles are held together strongly enough that porosity is reduced, restricting root development and the downward movement of water.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Chroma. The grayness of a color. Under the Munsell system, the grayness in soils is represented by numbers from 0 up to about 8 or 10, as the colors become more pure and less gray. A chroma of 0, or a neutral gray, is represented by the letter N.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeters in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly-rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour strip-cropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect down-slope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field strip-cropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full strip-cropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess sulfur (in tables). Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Folist. The Soil Science Society of America defines folists as: "Histosols that have an accumulation of organic soil materials mainly as forest litter that is greater than 1 meter deep to rock or to fragmental materials with interstices filled with organic materials. Folists are not saturated with water long enough to limit their use if cropped."

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hill slope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and down slope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded strip-cropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter. Very gravelly: 35-60 percent by volume.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, partly-consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Hue. The color of a soil, expressed within the Munsell color system as the letter abbreviation of the color of the rainbow, preceded by numbers from 0 to 10. As the numbers increase, the color shifts toward the next color of the rainbow.

Humus. The well-decomposed, more or less stable part of the organic matter in mineral soils.

Hydric soil. Soils that are wet long enough to produce anaerobic conditions periodically, thereby influencing the growth of plants. Water may be ponded on the surface for longer than 7 days. A wetland is a transitional area between aquatic and terrestrial ecosystems that is inundated or saturated for long enough periods to produce hydric soils and to support hydrophytic vegetation.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very-slowly-permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. In group A are soils with a high infiltration rate when thoroughly wet, and low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils with a very slow infiltration rate and high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased as the soil moves from a moist to a dry state.

Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation. Pits, gravel, and Udorthents, refuse substratum, are examples.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size, not due to wetness. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely-divided, well-decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 represents a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Ortstein. A cemented spodic horizon.

Outwash plain. A landform of mainly sandy- or coarse-textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Oven-dry. The Soil Science Society of America states that an oven-dry condition exists when soil has been dried at 105o C. until it reaches constant mass.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, which has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affects the specified use.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Extremely slow	0.0 to 0.01 inch
Very slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid or very rapid permeability, the soil may not adequately filter effluent from a waste disposal system.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberate burning of an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation. Have a chroma value of 3 or more.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation. Have a chroma value of 2 or less.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Rubbed muck. Organic material with some fibers that do not break down when rubbed between the fingers. The amount of fibers remaining in the hand is recorded as a percentage of the whole.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Salty water (in tables). Water that is too salty for consumption by livestock.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeters to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturated hydraulic conductivity. Ability of a soil to transmit water or air. The rate of downward movement of water through a unit area of saturated soil is described in micrometers per second. Terms describing saturated hydraulic conductivity, measured in micrometers per second, are as follows:

Very slow	0.01 < 0.42
Slow	0.42 < 1.41
Moderately slow	1.41 < 4.23
Moderate	4.23 < 14.11
Moderately rapid	14.11 < 42.34
Rapid	42.34 < 141.14
Very rapid	more than 141.14

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hill slope. It is a transition from backslope to summit. The surface is predominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland water flow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, it is soil which is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of predominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level:	0 to 3 percent
Gently sloping:	3 to 8 percent
Strongly sloping:	8 to 15 percent
Moderately steep:	15 to 25 percent
Steep:	25 to 35 percent
Very steep:	35 percent and higher

Classes for complex slopes are as follows:

Undulating:	0 to 8 percent
Rolling:	3 to 15 percent
Hilly:	8 to 25 percent
Steep:	15 to 35 percent
Very steep:	25 to 45 percent

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Sloughed till. Water-saturated till which has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to Ca^{++} + Mg^{++}. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	ess than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Spodic horizon. The Soil Science Society of America describes this as, "A mineral soil horizon that is characterized by the illuvial accumulation of amorphous materials composed of aluminum and organic carbon with or without iron. The spodic horizon has a certain minimum thickness and a minimum quantity of extractable carbon plus iron plus aluminum in relation to its content of clay."

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hill slope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hill slope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hill slope continuum that grades to valley or closed-depression floors.

Too arid (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

Toposequence. A sequence of related soils that differ primarily because of topography as a soil-formation factor.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to top-dress road banks, lawns, and land affected by mining.

Toxicity (in tables). Excessive amount of toxic substances, such as sodium or sulfur, which severely hinder establishment of vegetation or severely restrict plant growth.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Value. The darkness or lightness of a color. Values range from black to white, expressed numerically from 0 to 10.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variant, soil. A soil having properties sufficiently different from those of other known soils to justify a new series name, but occurring in such a limited geographic area that creation of a new series is not justified.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within one year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Water table. The upper surface of ground water where the water is at atmospheric pressure. It is at least six inches thick and persists in the soil for more than a few weeks.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth’s surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly-graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1971-2000 at Bedford, MA)

Month	Temperature						Precipitation				
				2 years in 10 will have—				2 years in 10 will have—			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than—	Minimum temperature lower than—	Average number of growing degree days*	Average	Less than—	More than—	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	35.0	15.7	25.3	61	-10	1	4.24	1.99	6.25	7	15.6
February----	38.0	18.2	28.1	63	-7	1	3.33	2.03	4.63	5	11.6
March-------	46.8	26.6	36.7	78	3	12	4.21	2.57	5.78	7	9.4
April-------	58.0	35.8	46.9	86	21	56	3.99	2.40	5.48	7	2.8
May---------	69.4	45.8	57.6	91	31	249	3.76	2.20	5.09	7	0.3
June--------	77.5	54.7	66.1	94	39	483	3.61	1.31	5.60	6	0.0
July--------	82.6	60.3	71.5	96	46	666	3.83	2.41	5.15	5	0.0
August------	80.7	58.9	69.8	94	43	613	3.54	1.78	5.10	6	0.0
September---	72.4	50.2	61.3	90	32	343	3.84	1.84	5.53	6	0.0
October-----	61.7	39.0	50.3	81	22	102	4.13	2.33	5.78	6	0.1
November----	50.7	31.2	41.0	75	12	25	4.39	2.64	6.12	7	3.2
December----	39.6	21.5	30.5	65	-2	3	4.07	2.03	5.95	7	10.2
Yearly:											
Average---	59.4	38.2	48.8	—	—	—	—	—	—	—	--
Extreme---	101	-19	—	97	-12	—	—	—	—	—	--
Total-----	—	—	—	—	—	2553	51.22	40.97	52.65	76	53.2

Average number of days per year with at least 1 inch of snow on the ground: 62

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (Threshold: 50 degrees F).

Table 2.—Approximate Freeze Dates In Spring and Fall

(Recorded for the period 1971-2000 at BEDFORD, MA)

	Temperature		
Probability	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	April 15	April 28	May 18
2 year in 10 later than--	April 11	April 24	May 13
5 year in 10 later than--	April 3	April 16	May 4
First freezing temperature in fall:			
1 yr in 10 earlier than--	October 16	October 4	September 19
2 yr in 10 earlier than--	October 21	October 9	September 24
5 yr in 10 earlier than--	November 1	October 18	October 5

Table 3.—Length of the Growing Season

(Recorded for the period 1971-2000 at BEDFORD, MA)

	Daily Minimum Temperature		
Probability	# days > 24°F	# days > 28°F	# days > 32°F
9 years in 10	192	170	142
8 years in 10	199	175	147
5 years in 10	213	186	158
2 years in 10	227	197	169
1 year in 10	234	203	174

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1	Water	17,281	3.2
2A	Pootatuck fine sandy loam, 0 to 3 percent slopes	1,248	0.2
4A	Rippowam fine sandy loam, 0 to 3 percent slopes	1,034	0.2
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	9,886	1.8
8A	Limerick silt loam, 0 to 3 percent slopes	493	*
30B	Raynham silt loam, 0 to 5 percent slopes	1,123	0.2
32B	Wareham loamy fine sand, 0 to 5 percent slopes	5,888	1.1
33B	Raypol silt loam, 0 to 5 percent slopes	514	*
36A	Saco mucky silt loam, 0 to 1 percent slopes	7,576	1.4
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	1,599	0.3
51A	Swansea muck, 0 to 1 percent slopes	12,240	2.3
52A	Freetown muck, 0 to 1 percent slopes	30,306	5.6
53A	Freetown muck, ponded, 0 to 1 percent slopes	5,270	1.0
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	8,953	1.7
73B	Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony	8,601	1.6
97A	Suncook loamy sand, 0 to 3 percent slopes	810	0.1
98A	Winooski very fine sandy loam, 0 to 3 percent slopes	685	0.1
99A	Occum very fine sandy loam, 0 to 3 percent slopes	430	*
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	13,807	2.5
103C	Charlton-Hollis-Rock outcrop complex, 8 to 15 percent slopes	12,990	2.4
103D	Charlton-Hollis-Rock outcrop complex, 15 to 25 percent slopes	4,641	0.9
104C	Hollis-Rock outcrop-Charlton complex, 3 to 15 percent slopes	11,114	2.1
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	6,835	1.3
105E	Rock outcrop-Hollis complex, 3 to 35 percent slopes	6,198	1.1
106C	Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes	6,044	1.1
106D	Narragansett-Hollis-Rock outcrop complex, 15 to 25 percent slopes	2,357	0.4
223A	Scio very fine sandy loam, 0 to 3 percent slopes	1,126	0.2
223B	Scio very fine sandy loam, 3 to 8 percent slopes	959	0.2
251A	Haven silt loam, 0 to 3 percent slopes	1,659	0.3
251B	Haven silt loam, 3 to 8 percent slopes	2,460	0.5
253A	Hinckley loamy sand, 0 to 3 percent slopes	2,387	0.4
253B	Hinckley loamy sand, 3 to 8 percent slopes	15,981	2.9
253C	Hinckley loamy sand, 8 to 15 percent slopes	7,574	1.4
253D	Hinckley loamy sand, 15 to 25 percent slopes	7,030	1.3
253E	Hinckley loamy sand, 25 to 35 percent slopes	2,309	0.4
254A	Merrimac fine sandy loam, 0 to 3 percent slopes	1,781	0.3
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	7,903	1.5
254C	Merrimac fine sandy loam, 8 to 15 percent slopes	727	0.1
255A	Windsor loamy sand, 0 to 3 percent slopes	8,574	1.6
255B	Windsor loamy sand, 3 to 8 percent slopes	15,579	2.9
255C	Windsor loamy sand, 8 to 15 percent slopes	2,807	0.5
256A	Deerfield loamy sand, 0 to 3 percent slopes	6,545	1.2
256B	Deerfield loamy sand, 3 to 8 percent slopes	5,058	0.9
259A	Carver loamy coarse sand, 0 to 3 percent slopes	1,914	0.4
259B	Carver loamy coarse sand, 3 to 8 percent slopes	1,294	0.2
259C	Carver loamy coarse sand, 8 to 15 percent slopes	341	*
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	4,224	0.8
261A	Tisbury silt loam, 0 to 3 percent slopes	966	0.2
261B	Tisbury silt loam, 3 to 8 percent slopes	477	*
262B	Quonset sandy loam, 3 to 8 percent slopes	4,264	0.8
262C	Quonset sandy loam, 8 to 15 percent slopes	1,674	0.3
262D	Quonset sandy loam, 15 to 25 percent slopes	2,042	0.4
262E	Quonset sandy loam, 25 to 35 percent slopes	773	0.1
300B	Montauk fine sandy loam, 3 to 8 percent slopes	5,447	1.0
300C	Montauk fine sandy loam, 8 to 15 percent slopes	2,038	0.4
300D	Montauk fine sandy loam, 15 to 25 percent slopes	592	0.1
302B	Montauk fine sandy loam, 3 to 8 percent slopes, extremely stony	6,206	1.1
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	3,801	0.7
302D	Montauk fine sandy loam, 15 to 25 percent slopes, extremely stony	1,916	0.4
305B	Paxton fine sandy loam, 3 to 8 percent slopes	5,015	0.9
305C	Paxton fine sandy loam, 8 to 15 percent slopes	3,180	0.6
305D	Paxton fine sandy loam, 15 to 25 percent slopes	1,745	0.3
305E	Paxton fine sandy loam, 25 to 35 percent slopes	407	*
307B	Paxton fine sandy loam, 3 to 8 percent slopes, extremely stony	4,658	0.9
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony	5,084	0.9
307D	Paxton fine sandy loam, 15 to 25 percent slopes, extremely stony	5,471	1.0

* See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—continued

Map symbol	Soil name	Acres	Percent
307E	Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony	2,075	0.4
310A	Woodbridge fine sandy loam, 0 to 3 percent slopes	1,181	0.2
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	5,587	1.0
310C	Woodbridge fine sandy loam, 8 to 15 percent slopes	433	*
311B	Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony	5,555	1.0
311C	Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	885	0.2
312B	Woodbridge fine sandy loam, 3 to 8 percent slopes, extremely stony	1,404	0.3
312C	Woodbridge fine sandy loam, 8 to 15 percent slopes, extremely stony	432	*
315B	Scituate fine sandy loam, 3 to 8 percent slopes	6,111	1.1
315C	Scituate fine sandy loam, 8 to 15 percent slopes	357	*
317B	Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony	7,234	1.3
317C	Scituate fine sandy loam, 8 to 15 percent slopes, extremely stony	1,051	0.2
320B	Birchwood fine sandy loam, 3 to 8 percent slopes	893	0.2
325D	Newport channery fine sandy loam, 8 to 25 percent slopes	475	*
330B	Bernardston very fine sandy loam, 3 to 8 percent slopes	1,146	0.2
330C	Bernardston very fine sandy loam, 8 to 15 percent slopes	817	0.2
330D	Bernardston very fine sandy loam, 15 to 25 percent slopes	1,393	0.3
330E	Bernardston very fine sandy loam, 25 to 35 percent slopes	635	0.1
335B	Rainbow silt loam, 3 to 8 percent slopes	867	0.2
336B	Rainbow silt loam, 3 to 8 percent slopes, very stony	643	0.1
340B	Broadbrook very fine sandy loam, 3 to 8 percent slopes	846	0.2
340D	Broadbrook very fine sandy loam, 8 to 25 percent slopes	446	*
341B	Broadbrook very fine sandy loam, 3 to 8 percent slopes, very stony	697	0.1
341C	Broadbrook very fine sandy loam, 8 to 15 percent slopes, very stony	632	0.1
341D	Broadbrook very fine sandy loam, 15 to 25 percent slopes, very stony	360	*
345A	Pittstown silt loam, 0 to 3 percent slopes	80	*
345B	Pittstown silt loam, 3 to 8 percent slopes	1,523	0.3
405B	Charlton fine sandy loam, 3 to 8 percent slopes	976	0.2
405C	Charlton fine sandy loam, 8 to 15 percent slopes	634	0.1
407B	Charlton fine sandy loam, 3 to 8 percent slopes, extremely stony	822	0.2
407C	Charlton fine sandy loam, 8 to 15 percent slopes, extremely stony	336	*
407D	Charlton fine sandy loam, 15 to 25 percent slopes, extremely stony	161	*
415B	Narragansett silt loam, 3 to 8 percent slopes	2,486	0.5
415C	Narragansett silt loam, 8 to 15 percent slopes	765	0.1
415D	Narragansett silt loam, 15 to 25 percent slopes	291	*
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony	3,704	0.7
416C	Narragansett silt loam, 8 to 15 percent slopes, very stony	1,992	0.4
416D	Narragansett silt loam, 15 to 25 percent slopes, very stony	724	0.1
420B	Canton fine sandy loam, 3 to 8 percent slopes	5,702	1.1
420C	Canton fine sandy loam, 8 to 15 percent slopes	2,135	0.4
420D	Canton fine sandy loam, 15 to 25 percent slopes	400	*
422B	Canton fine sandy loam, 3 to 8 percent slopes, extremely stony	7,259	1.3
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony	5,186	1.0
422D	Canton fine sandy loam, 15 to 25 percent slopes, extremely stony	1,377	0.3
424B	Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery	1,282	0.2
424C	Canton fine sandy loam, 8 to 15 percent slopes, extremely bouldery	1,824	0.3
424D	Canton fine sandy loam, 15 to 25 percent slopes, extremely bouldery	1,307	0.2
600	Pits, gravel	2,643	0.5
601	Pits, quarry	419	*
602	Urban land	18,718	3.5
603	Urban land, wet substratum	5,760	1.1
621B	Scio-Urban land complex, 0 to 8 percent slopes	1,562	0.3
622C	Paxton-Urban land complex, 3 to 15 percent slopes	6,884	1.3
623C	Woodbridge-Urban land complex, 3 to 15 percent slopes	4,242	0.8
624B	Haven-Urban land complex, 0 to 8 percent slopes	2,212	0.4
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	30,072	5.5
627C	Newport-Urban land complex, 3 to 15 percent slopes	4,025	0.7
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes	7,905	1.5
631C	Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky	12,960	2.4
652	Udorthents, refuse substratum	841	0.2
653	Udorthents, sandy	7,545	1.4
654	Udorthents, loamy	3,499	0.6
655	Udorthents, wet substratum	5,632	1.0
656	Udorthents-Urban land complex	12,161	2.2
	Total	542,112	100.0

* Less than 0.1 percent.

Table 5.—Prime Farmland

Map symbol	Map Unit Name
2A	Pootatuck fine sandy loam, 0 to 3 percent slopes
98A	Winooski very fine sandy loam, 0 to 3 percent slopes
99A	Occum very fine sandy loam, 0 to 3 percent slopes
223A	Scio very fine sandy loam, 0 to 3 percent slopes
223B	Scio very fine sandy loam, 3 to 8 percent slopes
251A	Haven silt loam, 0 to 3 percent slopes
251B	Haven silt loam, 3 to 8 percent slopes
254A	Merrimac fine sandy loam, 0 to 3 percent slopes
254B	Merrimac fine sandy loam, 3 to 8 percent slopes
260B	Sudbury fine sandy loam, 3 to 8 percent slopes
261A	Tisbury silt loam, 0 to 3 percent slopes
261B	Tisbury silt loam, 3 to 8 percent slopes
300B	Montauk fine sandy loam, 3 to 8 percent slopes
305B	Paxton fine sandy loam, 3 to 8 percent slopes
310A	Woodbridge fine sandy loam, 0 to 3 percent slopes
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes
315B	Scituate fine sandy loam, 3 to 8 percent slopes
320B	Birchwood fine sandy loam, 3 to 8 percent slopes
330B	Bernardston very fine sandy loam, 3 to 8 percent slopes
335B	Rainbow silt loam, 3 to 8 percent slopes
340B	Broadbrook very fine sandy loam, 3 to 8 percent slopes
345A	Pittstown silt loam, 0 to 3 percent slopes
345B	Pittstown silt loam, 3 to 8 percent slopes
405B	Charlton fine sandy loam, 3 to 8 percent slopes
415B	Narragansett silt loam, 3 to 8 percent slopes
420B	Canton fine sandy loam, 3 to 8 percent slopes

Table 6.—Land Capability and Non-Irrigated Yields by Map Unit Component

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil.)

Map symbol and soil name	Land capability	Corn silage	Sweet corn	Grass hay	Grass-clover	Grass-legume hay
		Tons	Tons	Tons	AUM	Tons
1:						
Water	---	---	---	---	---	---
2A:						
Pootatuck	2w	24.00	6.30	4.50	7.50	4.50
4A:						
Rippowam	4w	---	---	3.00	3.50	3.00
6A:						
Scarboro	5w	---	---	---	---	---
8A:						
Limerick	4w	---	---	---	---	---
30B:						
Raynham	4w	---	---	---	---	---
32B:						
Wareham	4w	11.00	---	2.00	5.70	2.00
33B:						
Raypol	4w	---	---	2.50	4.70	2.50
36A:						
Saco	6w	---	---	---	---	---
44A:						
Birdsall	5w	---	---	---	---	---
51A:						
Swansea	7w	---	---	---	---	---
52A:						
Freetown	7w	---	---	---	---	---
53A:						
Freetown, ponded	7w	---	---	---	---	---
71B:						
Ridgebury	7s	---	---	---	---	---
73B:						
Whitman	7s	---	---	---	---	---
97A:						
Suncook	3s	12.00	3.00	2.00	3.50	2.00
98A:						
Winooski	2w	26.00	5.60	---	7.50	4.00
99A:						
Occum	1	24.00	---	4.00	7.00	4.00
103B:						
Charlton	6s	24.00	5.90	4.00	7.50	4.50
Hollis	6s	15.00	---	2.50	5.00	3.00
Rock outcrop	8s	---	---	---	---	---

Table 6.—Land Capability and Non-Irrigated Yields by Map Unit Component—continued

Map symbol and soil name	Land capability	Corn silage	Sweet corn	Grass hay	Grass-clover	Grass-legume hay
		Tons	Tons	Tons	AUM	Tons
103C:						
Charlton----------------	6s	22.00	5.30	3.50	6.60	4.00
Hollis------------------	6s	14.00	---	2.00	3.50	2.50
Rock outcrop------------	8s	---	---	---	---	---
103D:						
Charlton----------------	6s	18.00	---	3.00	5.80	3.50
Hollis------------------	6s	---	---	---	---	---
Rock outcrop------------	8s	---	---	---	---	---
104C:						
Hollis------------------	6s	14.00	---	2.00	3.50	2.50
Rock outcrop------------	8s	---	---	---	---	---
Charlton----------------	6s	22.00	5.30	3.50	6.60	4.00
104D:						
Hollis------------------	6s	---	---	---	---	---
Rock outcrop------------	8s	---	---	---	---	---
Charlton----------------	6s	---	---	---	---	---
105E:						
Rock outcrop------------	8s	---	---	---	---	---
Hollis------------------	6s	14.00	---	2.00	3.50	2.50
106C:						
Narragansett------------	6s	24.00	---	4.00	7.60	4.00
Hollis------------------	6s	14.00	---	2.00	3.50	2.50
Rock outcrop------------	8s	---	---	---	---	---
106D:						
Narragansett------------	6s	20.00	---	3.50	6.70	3.50
Hollis------------------	6s	---	---	---	---	---
Rock outcrop------------	8s	---	---	---	---	---
223A:						
Scio--------------------	2w	22.00	---	---	---	3.50
223B:						
Scio--------------------	2e	22.00	---	---	---	3.50
251A:						
Haven-------------------	1	24.00	6.00	---	---	4.50
251B:						
Haven-------------------	2e	24.00	6.00	---	---	4.50
253A:						
Hinckley----------------	3s	12.00	4.50	---	3.60	2.00
253B:						
Hinckley----------------	3s	12.00	4.50	---	3.60	2.00

Table 6.—Land Capability and Non-Irrigated Yields by Map Unit Component—continued

Map symbol and soil name	Land capability	Corn silage	Sweet corn	Grass hay	Grass-clover	Grass-legume hay
		Tons	Tons	Tons	AUM	Tons
253C:						
Hinckley----------------	4s	---	---	---	2.50	---
253D:						
Hinckley----------------	6s	---	---	---	2.00	---
253E:						
Hinckley----------------	7s	---	---	---	---	---
254A:						
Merrimac----------------	2s	18.00	6.10	---	5.70	3.00
254B:						
Merrimac----------------	2s	18.00	6.10	---	5.70	3.00
254C:						
Merrimac----------------	3e	16.00	6.00	---	5.70	3.00
255A:						
Windsor-----------------	3s	14.00	---	2.00	5.50	2.50
255B:						
Windsor-----------------	3s	14.00	---	2.00	5.50	2.50
255C:						
Windsor-----------------	4s	12.00	---	2.00	5.00	2.50
256A:						
Deerfield---------------	3w	16.00	6.00	---	5.80	3.00
256B:						
Deerfield---------------	3w	16.00	6.00	---	5.80	3.00
259A:						
Carver------------------	4s	---	---	---	4.80	---
259B:						
Carver------------------	4s	---	---	---	4.80	---
259C:						
Carver------------------	7s	---	---	---	---	---
260B:						
Sudbury-----------------	2e	18.00	5.90	4.00	7.60	4.00
261A:						
Tisbury-----------------	2w	24.00	---	4.00	7.50	4.00
261B:						
Tisbury-----------------	2e	24.00	---	4.00	7.50	4.00
262B:						
Quonset-----------------	3s	12.00	4.50	---	3.60	2.00
262C:						
Quonset-----------------	4s	---	---	---	2.50	---
262D:						
Quonset-----------------	6s	---	---	---	2.00	---
262E:						
Quonset-----------------	7s	---	---	---	---	---
300B:						
Montauk-----------------	2e	22.00	---	4.00	6.50	3.50

Table 6.—Land Capability and Non-Irrigated Yields by Map Unit Component—continued

Map symbol and soil name	Land capability	Corn silage	Sweet corn	Grass hay	Grass-clover	Grass-legume hay
		Tons	Tons	Tons	AUM	Tons
300C:						
Montauk	3e	20.00	---	3.50	6.50	3.50
300D:						
Montauk	4e	18.00	---	3.50	5.50	3.00
302B:						
Montauk	7s	---	---	---	---	---
302C:						
Montauk	7s	---	---	---	---	---
302D:						
Montauk	7s	---	---	---	---	---
305B:						
Paxton	2e	24.00	5.90	4.00	7.50	4.00
305C:						
Paxton	3e	22.00	---	4.00	7.50	4.00
305D:						
Paxton	4e	18.00	---	3.50	6.50	3.50
305E:						
Paxton	6e	---	---	---	6.00	---
307B:						
Paxton	7s	---	---	---	---	---
307C:						
Paxton	7s	---	---	---	---	---
307D:						
Paxton	7s	---	---	---	---	---
307E:						
Paxton	7s	---	---	---	---	---
310A:						
Woodbridge	2w	24.00	5.60	4.00	7.50	4.00
310B:						
Woodbridge	2e	24.00	5.60	4.00	7.50	4.00
310C:						
Woodbridge	3e	22.00	---	4.00	7.50	4.00
311B:						
Woodbridge	6s	---	---	---	---	---
311C:						
Woodbridge	6s	---	---	---	---	---
312B:						
Woodbridge	7s	---	---	---	---	---
312C:						
Woodbridge	7s	---	---	---	---	---
315B:						
Scituate	2w	24.00	---	4.00	6.50	3.50
315C:						
Scituate	3e	22.00	---	4.00	6.50	3.50

Table 6.—Land Capability and Non-Irrigated Yields by Map Unit Component—continued

Map symbol and soil name	Land capability	Corn silage	Sweet corn	Grass hay	Grass-clover	Grass-legume hay
		Tons	Tons	Tons	AUM	Tons
317B:						
Scituate	7s	---	---	---	---	---
317C:						
Scituate	7s	---	---	---	---	---
320B:						
Birchwood	2e	18.00	---	3.00	6.50	3.50
325D:						
Newport	4e	22.00	5.90	4.00	7.50	4.00
330B:						
Bernardston	2e	22.00	---	---	7.50	4.00
330C:						
Bernardston	3e	20.00	---	---	6.50	3.50
330D:						
Bernardston	4e	18.00	---	---	5.50	3.00
330E:						
Bernardston	6e	---	---	---	---	---
335B:						
Rainbow	2e	26.00	5.60	4.00	7.50	4.00
336B:						
Rainbow	6s	---	---	---	---	---
340B:						
Broadbrook	2e	26.00	6.10	4.00	7.50	4.00
340D:						
Broadbrook	4e	24.00	6.10	4.00	7.50	4.00
341B:						
Broadbrook	6s	---	---	---	---	---
341C:						
Broadbrook	6s	---	---	---	---	---
341D:						
Broadbrook	6s	---	---	---	---	---
345A:						
Pittstown	2w	20.00	---	---	6.50	3.50
345B:						
Pittstown	2e	20.00	---	---	6.50	3.50
405B:						
Charlton	2e	24.00	5.90	4.00	7.50	4.50
405C:						
Charlton	3e	22.00	5.30	3.50	6.60	4.00
407B:						
Charlton	7s	---	---	---	---	---
407C:						
Charlton	7s	---	---	---	---	---
407D:						
Charlton	7s	---	---	---	---	---

Table 6.—Land Capability and Non-Irrigated Yields by Map Unit Component—continued

Map symbol and soil name	Land capability	Corn silage	Sweet corn	Grass hay	Grass-clover	Grass-legume hay
		Tons	Tons	Tons	AUM	Tons
415B:						
Narragansett	2e	26.00	---	4.00	7.60	4.00
415C:						
Narragansett	3e	24.00	---	4.00	7.60	4.00
415D:						
Narragansett	4e	20.00	---	3.50	6.70	3.50
416B:						
Narragansett	6s	---	---	---	---	---
416C:						
Narragansett	6s	---	---	---	---	---
416D:						
Narragansett	6s	---	---	---	---	---
420B:						
Canton	2e	22.00	---	4.00	8.50	4.50
420C:						
Canton	3e	20.00	---	3.50	7.50	4.00
420D:						
Canton	4e	18.00	---	3.00	6.50	3.50
422B:						
Canton	7s	---	---	---	---	---
422C:						
Canton	7s	---	---	---	---	---
422D:						
Canton	7s	---	---	---	---	---
424B:						
Canton	7s	---	---	---	---	---
424C:						
Canton	7s	---	---	---	---	---
424D:						
Canton	7s	---	---	---	---	---
600:						
Pits, gravel	---	---	---	---	---	---
601:						
Pits, quarry	---	---	---	---	---	---
602:						
Urban land	---	---	---	---	---	---
603:						
Urban land	---	---	---	---	---	---
621B:						
Scio	2e	22.00	---	---	---	3.50
Urban land	---	---	---	---	---	---
622C:						
Paxton	3e	22.00	---	4.00	7.50	4.00
Urban land	---	---	---	---	---	---

Table 6.—Land Capability and Non-Irrigated Yields by Map Unit Component—continued

Map symbol and soil name	Land capability	Corn silage	Sweet corn	Grass hay	Grass-clover	Grass-legume hay
		Tons	Tons	Tons	AUM	Tons
623C:						
Woodbridge	3e	22.00	---	4.00	7.50	4.00
Urban land	---	---	---	---	---	---
624B:						
Haven	2e	24.00	6.00	---	---	4.50
Urban land	---	---	---	---	---	---
626B:						
Merrimac	2s	18.00	6.10	---	5.70	3.00
Urban land	---	---	---	---	---	---
627C:						
Newport	4e	22.00	5.90	4.00	7.50	4.00
Urban land	---	---	---	---	---	---
629C:						
Canton	3e	20.00	---	3.50	7.50	4.00
Charlton	3e	22.00	5.30	3.50	6.60	4.00
Urban land	---	---	---	---	---	---
631C:						
Charlton	3e	22.00	5.30	3.50	6.60	4.00
Urban land	---	---	---	---	---	---
Hollis	6s	15.00	---	2.50	5.00	3.00
652:						
Udorthents, refuse substratum	---	---	---	---	---	---
653:						
Udorthents, sandy	---	---	---	---	---	---
654:						
Udorthents, loamy	---	---	---	---	---	---
655:						
Udorthents, wet substratum	---	---	---	---	---	---
656:						
Udorthents	---	---	---	---	---	---
Urban land	---	---	---	---	---	---

Table 7.—Woodland Management and Productivity

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
1:									
Water	---	---	---	---	---	---	---	---	---
2A:									
Pootatuck	Slight	Slight	Slight	Slight	Moderate	eastern white pine	75	143.00	eastern white pine, white spruce
						red maple	60	43.00	
						red pine	75	143.00	
						yellow birch	60	43.00	
4A:									
Rippowam	Slight	Severe	Severe	Severe	Severe	eastern white pine	65	114.00	eastern white pine, white spruce
						red maple	75	43.00	
6A:									
Scarboro	Slight	Severe	Severe	Severe	---	eastern white pine	55	86.00	eastern arborvitae
						red maple	55	29.00	
8A:									
Limerick	Slight	Severe	Severe	Severe	---	eastern white pine	65	114.00	eastern arborvitae, eastern white pine, white spruce
						red maple	40	29.00	
30B:									
Raynham	Slight	Severe	Moderate	Severe	---	eastern white pine	65	114.00	eastern white pine, white spruce
						red maple	65	43.00	
						red spruce	45	100.00	
						white spruce	55	129.00	
32B:									
Wareham	Slight	Severe	Severe	Severe	---	eastern white pine	65	114.00	eastern white pine, white spruce
						red maple	65	43.00	
						red spruce	45	100.00	
33B:									
Raypol	Slight	Severe	Severe	Severe	Severe	eastern white pine	68	114.00	eastern hemlock, eastern white pine, white spruce
						red maple	75	43.00	
36A:									
Saco	Slight	Severe	Severe	Severe	Severe	eastern arborvitae	45	72.00	---
						eastern white pine	50	86.00	
						red maple	50	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
44A:									
Birdsall	Slight	Severe	Severe	Severe	Severe	red maple	50	29.00	---
51A:									
Swansea	Slight	Severe	Severe	Severe	---	balsam fir	45	86.00	balsam fir, eastern hemlock, white spruce
						green ash	35	29.00	
						red maple	50	29.00	
						red spruce	50	114.00	
52A:									
Freetown	Slight	Severe	Severe	Severe	---	balsam fir	45	86.00	balsam fir, eastern hemlock, white spruce
						green ash	35	29.00	
						red maple	50	29.00	
						red spruce	50	114.00	
53A:									
Freetown, ponded	---	---	---	---	---	---	---	---	---
71B:									
Ridgebury	Slight	Severe	Severe	Severe	---	eastern white pine	63	114.00	eastern white pine, white spruce
						northern red oak	57	43.00	
						red spruce	47	100.00	
						sugar maple	52	29.00	
73B:									
Whitman	Slight	Severe	Severe	Severe	---	eastern white pine	56	100.00	---
						red maple	55	29.00	
						red spruce	44	86.00	
97A:									
Suncook	Slight	Slight	Severe	Slight	Slight	black oak	50	29.00	eastern white pine, red pine
						eastern white pine	55	86.00	
						northern red oak	50	29.00	
						red maple	50	29.00	
98A:									
Winooski	Slight	Slight	Slight	Slight	---	eastern white pine	75	143.00	European larch, eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	65	43.00	
						white spruce	70	143.00	
99A:									
Occum	Slight	Slight	Slight	Slight	Moderate	eastern white pine	70	129.00	eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						sugar maple	60	43.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
103B:									
Charlton	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
Hollis	Slight	Slight	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	
Rock outcrop	---	---	---	---	---	---	---	---	---
103C:									
Charlton	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
Hollis	Slight	Slight	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	
Rock outcrop	---	---	---	---	---	---	---	---	---
103D:									
Charlton	Moderate	Moderate	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
Hollis	Moderate	Moderate	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	
Rock outcrop	---	---	---	---	---	---	---	---	---

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
104C:									
Hollis	Slight	Slight	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	
Rock outcrop	---	---	---	---	---	---	---	---	---
Charlton	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
104D:									
Hollis	Moderate	Moderate	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	
Rock outcrop	---	---	---	---	---	---	---	---	---
Charlton	Moderate	Moderate	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
105E:									
Rock outcrop	---	---	---	---	---	---	---	---	---
Hollis	Moderate	Moderate	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	
106C:									
Narragansett	Slight	Slight	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	
Hollis	Slight	Slight	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
106D:									
Narragansett	Moderate	Moderate	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	
Hollis	Moderate	Moderate	Moderate	Severe	Slight	eastern white pine	55	86.00	eastern white pine
						northern red oak	47	29.00	
						sugar maple	56	29.00	
223A:									
Scio	Slight	Slight	Slight	Slight	---	black cherry	80	57.00	European larch, Norway spruce, eastern white pine, red pine, white spruce
						eastern white pine	85	143.00	
						northern red oak	75	57.00	
						sugar maple	70	43.00	
						white ash	85	57.00	
223B:									
Scio	Slight	Slight	Slight	Slight	---	black cherry	80	57.00	European larch, Norway spruce, eastern white pine, red pine, white spruce
						eastern white pine	85	143.00	
						northern red oak	75	57.00	
						sugar maple	70	43.00	
						white ash	85	57.00	
251A:									
Haven	Slight	Slight	Slight	Slight	---	eastern white pine	75	143.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	55	43.00	
						red pine	75	114.00	
						sugar maple	65	43.00	
251B:									
Haven	Slight	Slight	Slight	Slight	---	eastern white pine	75	143.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	55	43.00	
						red pine	75	114.00	
						sugar maple	65	43.00	
253A:									
Hinckley	Slight	Slight	Severe	Slight	Slight	eastern white pine	60	100.00	European larch, eastern white pine
						northern red oak	49	29.00	
						red pine	58	100.00	
						sugar maple	57	29.00	
253B:									
Hinckley	Slight	Slight	Severe	Slight	Slight	eastern white pine	60	100.00	European larch, eastern white pine
						northern red oak	49	29.00	
						red pine	58	100.00	
						sugar maple	57	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
253C:									
Hinckley	Slight	Slight	Severe	Slight	Slight	eastern white pine	60	100.00	European larch, eastern white pine
						northern red oak	49	29.00	
						red pine	58	100.00	
						sugar maple	57	29.00	
253D:									
Hinckley	Moderate	Moderate	Severe	Slight	Slight	eastern white pine	60	100.00	European larch, eastern white pine
						northern red oak	49	29.00	
						red pine	58	100.00	
						sugar maple	57	29.00	
253E:									
Hinckley	Moderate	Moderate	Severe	Slight	Slight	eastern white pine	60	100.00	European larch, eastern white pine
						northern red oak	49	29.00	
						red pine	58	100.00	
						sugar maple	57	29.00	
254A:									
Merrimac	Slight	Slight	Moderate	Slight	---	eastern white pine	64	114.00	eastern white pine, red pine
						northern red oak	51	29.00	
						sugar maple	58	43.00	
254B:									
Merrimac	Slight	Slight	Moderate	Slight	---	eastern white pine	64	114.00	eastern white pine, red pine
						northern red oak	51	29.00	
						sugar maple	58	43.00	
254C:									
Merrimac	Slight	Slight	Moderate	Slight	---	eastern white pine	64	114.00	eastern white pine, red pine
						northern red oak	51	29.00	
						sugar maple	58	43.00	
255A:									
Windsor	Slight	Slight	Severe	Slight	Slight	eastern white pine	57	100.00	Norway spruce, eastern white pine, red pine
						northern red oak	52	29.00	
						red pine	61	100.00	
						sugar maple	55	29.00	
255B:									
Windsor	Slight	Slight	Severe	Slight	Slight	eastern white pine	57	100.00	Norway spruce, eastern white pine, red pine
						northern red oak	52	29.00	
						red pine	61	100.00	
						sugar maple	55	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Suggested trees to plant
								cu ft/yr	
255C:									
Windsor	Slight	Slight	Severe	Slight	Slight	eastern white pine	57	100.00	Norway spruce, eastern white pine, red pine
						northern red oak	52	29.00	
						red pine	61	100.00	
						sugar maple	55	29.00	
256A:									
Deerfield	Slight	Slight	Moderate	Slight	---	eastern white pine	65	114.00	Douglas fir, European larch, eastern white pine, red pine, white spruce
						northern red oak	55	43.00	
256B:									
Deerfield	Slight	Slight	Moderate	Slight	---	eastern white pine	65	114.00	Douglas fir, European larch, eastern white pine, red pine, white spruce
						northern red oak	55	43.00	
259A:									
Carver	Slight	Slight	Severe	Slight	---	eastern white pine	53	86.00	European larch, eastern white pine, red pine
						red pine	60	86.00	
259B:									
Carver	Slight	Slight	Severe	Slight	---	eastern white pine	53	86.00	European larch, eastern white pine, red pine
						red pine	60	86.00	
259C:									
Carver	Slight	Slight	Severe	Slight	---	eastern white pine	53	86.00	European larch, eastern white pine, red pine
						red pine	60	86.00	
260B:									
Sudbury	Slight	Slight	Slight	Slight	---	eastern white pine	60	100.00	European larch, Norway spruce, eastern white pine, red pine, white spruce
						northern red oak	45	29.00	
						red pine	60	86.00	
						red spruce	47	100.00	
261A:									
Tisbury	Slight	Slight	Slight	Slight	Moderate	eastern white pine	75	143.00	eastern white pine
						northern red oak	70	57.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber cu ft/yr	
261B:									
Tisbury	Slight	Slight	Slight	Slight	Moderate	eastern white pine	75	143.00	eastern white pine
						northern red oak	70	57.00	
262B:									
Quonset	Slight	Slight	Severe	Slight	---	eastern white pine	61	100.00	eastern white pine,
						northern red oak	47	29.00	red pine
						red pine	60	86.00	
						sugar maple	52	29.00	
262C:									
Quonset	Slight	Slight	Severe	Slight	---	eastern white pine	61	100.00	eastern white pine,
						northern red oak	47	29.00	red pine
						red pine	60	86.00	
						sugar maple	52	29.00	
262D:									
Quonset	Slight	Moderate	Severe	Slight	---	eastern white pine	61	100.00	eastern white pine,
						northern red oak	47	29.00	red pine
						red pine	60	86.00	
						sugar maple	52	29.00	
262E:									
Quonset	Slight	Moderate	Severe	Slight	---	eastern white pine	61	100.00	eastern white pine,
						northern red oak	47	29.00	red pine
						red pine	60	86.00	
						sugar maple	52	29.00	
300B:									
Montauk	Slight	Slight	Slight	Slight	---	eastern white pine	75	143.00	European larch,
						northern red oak	70	57.00	Norway spruce,
						red pine	75	114.00	white spruce
						sugar maple	65	43.00	
300C:									
Montauk	Slight	Slight	Slight	Slight	---	eastern white pine	75	143.00	European larch,
						northern red oak	70	57.00	Norway spruce,
						red pine	75	114.00	white spruce
						sugar maple	65	43.00	
300D:									
Montauk	Slight	Moderate	Slight	Slight	---	eastern white pine	75	143.00	European larch,
						northern red oak	70	57.00	Norway spruce,
						red pine	75	114.00	white spruce
						sugar maple	65	43.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Suggested trees to plant
								cu ft/yr	
302B:									
Montauk	Slight	Moderate	Slight	Slight	---	eastern white pine	75	143.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	65	43.00	
302C:									
Montauk	Slight	Moderate	Slight	Slight	---	eastern white pine	75	143.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	65	43.00	
302D:									
Montauk	Slight	Moderate	Slight	Slight	---	eastern white pine	75	143.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	65	43.00	
305B:									
Paxton	Slight	Slight	Moderate	Slight	Moderate	eastern white pine	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	65	43.00	
						red pine	67	114.00	
						sugar maple	75	43.00	
305C:									
Paxton	Slight	Slight	Moderate	Slight	Moderate	eastern white pine	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	65	43.00	
						red pine	67	114.00	
						sugar maple	75	43.00	
305D:									
Paxton	Moderate	Moderate	Moderate	Slight	Moderate	eastern white pine	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	65	43.00	
						red pine	67	114.00	
						sugar maple	75	43.00	
305E:									
Paxton	Moderate	Moderate	Moderate	Slight	Moderate	eastern white pine	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	65	43.00	
						red pine	67	114.00	
						sugar maple	75	43.00	
307B:									
Paxton	Slight	Moderate	Slight	Moderate	Moderate	eastern white pine	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	65	43.00	
						red pine	67	114.00	
						sugar maple	75	43.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
307C:									
Paxton------------------	Slight	Moderate	Slight	Moderate	Moderate	eastern white pine--	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak----	65	43.00	
						red pine------------	67	114.00	
						sugar maple---------	75	43.00	
307D:									
Paxton------------------	Moderate	Moderate	Slight	Moderate	Moderate	eastern white pine--	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak----	65	43.00	
						red pine------------	67	114.00	
						sugar maple---------	75	43.00	
307E:									
Paxton------------------	Moderate	Moderate	Slight	Moderate	Moderate	eastern white pine--	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak----	65	43.00	
						red pine------------	67	114.00	
						sugar maple---------	75	43.00	
310A:									
Woodbridge--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	67	114.00	European larch, eastern white pine, red pine
						northern red oak----	72	57.00	
						red pine------------	65	114.00	
						red spruce----------	50	114.00	
						sugar maple---------	65	43.00	
310B:									
Woodbridge--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	67	114.00	European larch, eastern white pine, red pine
						northern red oak----	72	57.00	
						red pine------------	65	114.00	
						red spruce----------	50	114.00	
						sugar maple---------	65	43.00	
310C:									
Woodbridge--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	67	114.00	European larch, eastern white pine, red pine
						northern red oak----	72	57.00	
						red pine------------	65	114.00	
						red spruce----------	50	114.00	
						sugar maple---------	65	43.00	
311B:									
Woodbridge--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	67	114.00	European larch, eastern white pine, red pine
						northern red oak----	72	57.00	
						red pine------------	65	114.00	
						red spruce----------	50	114.00	
						sugar maple---------	65	43.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
311C:									
Woodbridge	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	67	114.00	European larch, eastern white pine, red pine
						northern red oak	72	57.00	
						red pine	65	114.00	
						red spruce	50	114.00	
						sugar maple	65	43.00	
312B:									
Woodbridge	Moderate	Moderate	Slight	Moderate	Moderate	eastern white pine	67	114.00	European larch, eastern white pine, red pine
						northern red oak	72	57.00	
						red pine	65	114.00	
						red spruce	50	114.00	
						sugar maple	65	43.00	
312C:									
Woodbridge	Moderate	Moderate	Slight	Moderate	Moderate	eastern white pine	67	114.00	European larch, eastern white pine, red pine
						northern red oak	72	57.00	
						red pine	65	114.00	
						red spruce	50	114.00	
						sugar maple	65	43.00	
315B:									
Scituate	Slight	Slight	Slight	Slight	Moderate	eastern white pine	65	114.00	eastern white pine, white spruce
						northern red oak	61	43.00	
						red pine	70	129.00	
						sugar maple	55	29.00	
315C:									
Scituate	Slight	Slight	Slight	Slight	Moderate	eastern white pine	65	114.00	eastern white pine, white spruce
						northern red oak	61	43.00	
						red pine	70	129.00	
						sugar maple	55	29.00	
317B:									
Scituate	Slight	Slight	Slight	Slight	Moderate	eastern white pine	65	114.00	eastern white pine, white spruce
						northern red oak	61	43.00	
						red pine	70	129.00	
						sugar maple	55	29.00	
317C:									
Scituate	Slight	Slight	Slight	Slight	Moderate	eastern white pine	65	114.00	eastern white pine, white spruce
						northern red oak	61	43.00	
						red pine	70	129.00	
						sugar maple	55	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns: Erosion hazard	Management concerns: Equipment limitation	Management concerns: Seedling mortality	Management concerns: Windthrow hazard	Management concerns: Plant competition	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Suggested trees to plant
								cu ft/yr	
320B:									
Birchwood	Slight	Slight	Moderate	Moderate	Moderate	eastern white pine	65	114.00	eastern white pine
						northern red oak	60	43.00	
325D:									
Newport	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	75	143.00	eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	63	43.00	
330B:									
Bernardston	Slight	Slight	Slight	Slight	---	eastern white pine	65	114.00	Douglas fir, Fraser's fir, eastern hemlock, eastern white pine, white spruce
						northern red oak	55	43.00	
						sugar maple	65	43.00	
330C:									
Bernardston	Slight	Slight	Slight	Slight	---	eastern white pine	65	114.00	Douglas fir, Fraser's fir, eastern hemlock, eastern white pine, white spruce
						northern red oak	55	43.00	
						sugar maple	65	43.00	
330D:									
Bernardston	Moderate	Moderate	Slight	Slight	---	eastern white pine	65	114.00	Douglas fir, Fraser's fir, eastern hemlock, eastern white pine, white spruce
						northern red oak	55	43.00	
						sugar maple	65	43.00	
330E:									
Bernardston	Moderate	Moderate	Slight	Slight	---	eastern white pine	65	114.00	Douglas fir, Fraser's fir, eastern hemlock, eastern white pine, white spruce
						northern red oak	55	43.00	
						sugar maple	65	43.00	
335B:									
Rainbow	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	75	143.00	European larch, eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	54	29.00	
336B:									
Rainbow	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	75	143.00	European larch, eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	54	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
340B:									
Broadbrook--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	75	143.00	European larch,
						northern red oak----	70	57.00	eastern white pine
						tuliptree-----------	93	100.00	
						white ash-----------	76	43.00	
340D:									
Broadbrook--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	75	143.00	European larch,
						northern red oak----	70	57.00	eastern white pine
						tuliptree-----------	93	100.00	
						white ash-----------	76	43.00	
341B:									
Broadbrook--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	75	143.00	European larch,
						northern red oak----	70	57.00	eastern white pine
						tuliptree-----------	93	100.00	
						white ash-----------	76	43.00	
341C:									
Broadbrook--------------	Slight	Slight	Slight	Moderate	Moderate	eastern white pine--	75	143.00	European larch,
						northern red oak----	70	57.00	eastern white pine
						tuliptree-----------	93	100.00	
						white ash-----------	76	43.00	
341D:									
Broadbrook--------------	Moderate	Moderate	Slight	Moderate	Moderate	eastern white pine--	75	143.00	European larch,
						northern red oak----	70	57.00	eastern white pine
						tuliptree-----------	93	100.00	
						white ash-----------	76	43.00	
345A:									
Pittstown---------------	Slight	Slight	Slight	Slight	Moderate	eastern white pine--	80	143.00	Scotch pine, balsam
						northern red oak----	72	57.00	fir, eastern white
						red spruce----------	50	114.00	pine, white spruce
						sugar maple---------	66	43.00	
345B:									
Pittstown---------------	Slight	Slight	Slight	Slight	Moderate	eastern white pine--	80	143.00	Scotch pine, balsam
						northern red oak----	72	57.00	fir, eastern white
						red spruce----------	50	114.00	pine, white spruce
						sugar maple---------	66	43.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
405B:									
Charlton	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
405C:									
Charlton	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
407B:									
Charlton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
407C:									
Charlton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
407D:									
Charlton	Moderate	Moderate	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
415B:									
Narragansett	Slight	Slight	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	
415C:									
Narragansett	Slight	Slight	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
415D:									
Narragansett	Moderate	Moderate	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	
416B:									
Narragansett	Slight	Slight	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	
416C:									
Narragansett	Slight	Slight	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	
416D:									
Narragansett	Moderate	Moderate	Slight	Slight	Slight	eastern white pine	68	114.00	European larch, eastern hemlock, eastern white pine
						northern red oak	60	43.00	
						sugar maple	55	29.00	
420B:									
Canton	Slight	Slight	Slight	Slight	---	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
420C:									
Canton	Slight	Slight	Slight	Slight	---	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
420D:									
Canton	Slight	Moderate	Slight	Slight	---	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
422B:									
Canton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
422C:									
Canton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
422D:									
Canton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
424B:									
Canton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
424C:									
Canton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
424D:									
Canton	Slight	Moderate	Slight	Slight	Slight	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
600:									
Pits, gravel	---	---	---	---	---	---	---	---	---
601:									
Pits, quarry	---	---	---	---	---	---	---	---	---
602:									
Urban land	---	---	---	---	---	---	---	---	---
603:									
Urban land	---	---	---	---	---	---	---	---	---
621B:									
Scio	Slight	Slight	Slight	Slight	---	black cherry	80	57.00	European larch, Norway spruce, eastern white pine, red pine, white spruce
						eastern white pine	85	143.00	
						northern red oak	75	57.00	
						sugar maple	70	43.00	
						white ash	85	57.00	
Urban land	---	---	---	---	---	---	---	---	---
622C:									
Paxton	Slight	Slight	Moderate	Slight	Moderate	eastern white pine	66	114.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	65	43.00	
						red pine	67	114.00	
						sugar maple	75	43.00	
Urban land	---	---	---	---	---	---	---	---	---
623C:									
Woodbridge	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	67	114.00	European larch, eastern white pine, red pine
						northern red oak	72	57.00	
						red pine	65	114.00	
						red spruce	50	114.00	
						sugar maple	65	43.00	
Urban land	---	---	---	---	---	---	---	---	---

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
624B:									
Haven	Slight	Slight	Slight	Slight	---	eastern white pine	75	143.00	European larch, Norway spruce, eastern white pine, red pine
						northern red oak	55	43.00	
						red pine	75	114.00	
						sugar maple	65	43.00	
Urban land	---	---	---	---	---	---	---	---	---
626B:									
Merrimac	Slight	Slight	Moderate	Slight	---	eastern white pine	64	114.00	eastern white pine, red pine
						northern red oak	51	29.00	
						sugar maple	58	43.00	
Urban land	---	---	---	---	---	---	---	---	---
627C:									
Newport	Slight	Slight	Slight	Moderate	Moderate	eastern white pine	75	143.00	eastern white pine, red pine
						northern red oak	70	57.00	
						sugar maple	63	43.00	
Urban land	---	---	---	---	---	---	---	---	---
629C:									
Canton	Slight	Slight	Slight	Slight	---	eastern white pine	58	100.00	eastern white pine, white spruce
						northern red oak	52	29.00	
Charlton	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
Urban land	---	---	---	---	---	---	---	---	---
631C:									
Charlton	Slight	Slight	Slight	Slight	Slight	eastern white pine	65	114.00	European larch, eastern hemlock, eastern white pine, red pine, white spruce
						northern red oak	65	43.00	
						red maple	55	29.00	
						red pine	70	129.00	
						red spruce	50	114.00	
						sugar maple	55	29.00	
Urban land	---	---	---	---	---	---	---	---	---

Table 7.—Woodland Management and Productivity—continued

Map symbol and soil name	Management concerns					Potential productivity			Suggested trees to plant
	Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
								cu ft/yr	
652:									
Udorthents, refuse substratum	---	---	---	---	---	---	---	---	---
653:									
Udorthents, sandy	---	---	---	---	---	---	---	---	---
654:									
Udorthents, loamy	---	---	---	---	---	---	---	---	---
655:									
Udorthents, wet substratum	---	---	---	---	---	---	---	---	---
656:									
Udorthents	---	---	---	---	---	---	---	---	---
Urban land	---	---	---	---	---	---	---	---	---

Table 8.—Recreational Development

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1: Water	---	---	---	---	---
2A: Pootatuck	Severe: flooding	Moderate: wetness	Moderate: flooding wetness	Moderate: wetness	Moderate: flooding wetness
4A: Rippowam	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness
6A: Scarboro	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding
8A: Limerick	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness
30B: Raynham	Severe: wetness	Severe: wetness	Severe: wetness	Severe: erodes easily wetness	Severe: wetness
32B: Wareham	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
33B: Raypol	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
36A: Saco	Severe: flooding	Severe: wetness	Severe: flooding wetness	Severe: wetness	Severe: flooding wetness
44A: Birdsall	Severe: ponding	Severe: ponding	Severe: ponding	Severe: wetness ponding	Severe: ponding

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
51A:					
Swansea----------	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
52A:					
Freetown---------	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
53A:					
Freetown, ponded	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding	Severe: excess humus ponding
71B:					
Ridgebury--------	Severe: large stones percs slowly wetness	Severe: large stones percs slowly wetness	Severe: large stones small stones wetness	Severe: wetness	Severe: wetness
73B:					
Whitman----------	Severe: large stones ponding	Severe: large stones ponding	Severe: large stones ponding	Severe: ponding	Severe: large stones ponding
97A:					
Suncook----------	Severe: flooding	Moderate: flooding too sandy	Severe: flooding	Moderate: flooding too sandy	Severe: flooding
98A:					
Winooski---------	Severe: flooding	Moderate: flooding wetness	Severe: flooding	Slight	Severe: flooding
99A:					
Occum------------	Severe: flooding	Moderate: flooding	Severe: flooding	Moderate: flooding	Severe: flooding
103B:					
Charlton---------	Moderate: large stones	Moderate: large stones	Severe: large stones	Slight	Moderate: large stones
Hollis-----------	Severe: depth to rock	Severe: depth to rock	Severe: large stones depth to rock	Slight	Severe: depth to rock
Rock outcrop-----	---	---	---	---	---

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
103C:					
Charlton--------	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope	Slight	Moderate: large stones slope
Hollis----------	Severe: depth to rock	Severe: depth to rock	Severe: large stones slope depth to rock	Slight	Severe: depth to rock
Rock outcrop----	---	---	---	---	---
103D:					
Charlton--------	Severe: slope	Severe: slope	Severe: large stones slope	Moderate: slope	Severe: slope
Hollis----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: large stones slope depth to rock	Moderate: slope	Severe: slope depth to rock
Rock outcrop----	---	---	---	---	---
104C:					
Hollis----------	Severe: depth to rock	Severe: depth to rock	Severe: large stones slope depth to rock	Slight	Severe: depth to rock
Rock outcrop----	---	---	---	---	---
Charlton--------	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope	Slight	Moderate: large stones slope
104D:					
Hollis----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: large stones slope depth to rock	Moderate: slope	Severe: slope depth to rock
Rock outcrop----	---	---	---	---	---
Charlton--------	Severe: slope	Severe: slope	Severe: large stones slope	Moderate: slope	Severe: slope

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
105E:					
Rock outcrop----	---	---	---	---	---
Hollis----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: large stones slope depth to rock	Moderate: slope	Severe: slope depth to rock
106C:					
Narragansett----	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope	Slight	Moderate: large stones slope
Hollis----------	Severe: depth to rock	Severe: depth to rock	Severe: large stones slope depth to rock	Slight	Severe: depth to rock
Rock outcrop----	---	---	---	---	---
106D:					
Narragansett----	Severe: slope	Severe: slope	Severe: large stones slope	Moderate: slope	Severe: slope
Hollis----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: large stones slope depth to rock	Moderate: slope	Severe: slope depth to rock
Rock outcrop----	---	---	---	---	---
223A:					
Scio------------	Moderate: wetness	Moderate: wetness	Moderate: wetness	Severe: erodes easily	Moderate: wetness
223B:					
Scio------------	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Severe: erodes easily	Moderate: wetness
251A:					
Haven-----------	Slight	Slight	Moderate: small stones	Slight	Slight
251B:					
Haven-----------	Slight	Slight	Moderate: slope small stones	Moderate: erodes easily	Slight

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
253A:					
Hinckley--------	Slight	Slight	Moderate: small stones	Slight	Severe: droughty
253B:					
Hinckley--------	Slight	Slight	Moderate: slope small stones	Slight	Severe: droughty
253C:					
Hinckley--------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Severe: droughty
253D:					
Hinckley--------	Moderate: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope droughty
253E:					
Hinckley--------	Moderate: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
254A:					
Merrimac--------	Slight	Slight	Moderate: small stones	Slight	Slight
254B:					
Merrimac--------	Slight	Slight	Moderate: slope small stones	Slight	Slight
254C:					
Merrimac--------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
255C:					
Windsor---------	Moderate: slope too sandy	Moderate: slope too sandy	Severe: slope	Moderate: too sandy	Moderate: slope droughty
256A:					
Deerfield-------	Moderate: too sandy wetness	Severe: too sandy	Moderate: wetness	Moderate: too sandy	Moderate: wetness droughty

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
256B:					
Deerfield-------	Moderate: too sandy wetness	Severe: too sandy	Moderate: slope wetness	Moderate: too sandy	Moderate: wetness droughty
259A:					
Carver----------	Moderate: too sandy	Moderate: too sandy	Moderate: too sandy	Moderate: too sandy	Severe: droughty
259B:					
Carver----------	Moderate: too sandy	Moderate: too sandy	Moderate: slope too sandy	Moderate: too sandy	Severe: droughty
259C:					
Carver----------	Moderate: slope too sandy	Moderate: slope too sandy	Severe: slope	Moderate: too sandy	Severe: droughty
260B:					
Sudbury---------	Moderate: wetness	Moderate: wetness	Moderate: slope small stones wetness	Slight	Slight
261A:					
Tisbury---------	Moderate: wetness	Moderate: wetness	Moderate: wetness	Severe: erodes easily	Moderate: wetness
261B:					
Tisbury---------	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Severe: erodes easily	Moderate: wetness
262B:					
Quonset---------	Slight	Slight	Moderate: slope small stones	Slight	Severe: droughty
262C:					
Quonset---------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Severe: droughty
262D:					
Quonset---------	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope droughty

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
262E:					
Quonset	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
300B:					
Montauk	Moderate: wetness	Moderate: wetness	Moderate: slope small stones	Slight	Severe: droughty
300C:					
Montauk	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Slight	Severe: droughty
300D:					
Montauk	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope droughty
302B:					
Montauk	Severe: large stones	Severe: large stones	Severe: large stones small stones	Slight	Moderate: large stones small stones
302C:					
Montauk	Severe: large stones	Severe: large stones	Severe: large stones slope small stones	Slight	Moderate: large stones slope small stones
302D:					
Montauk	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope small stones	Moderate: slope	Severe: slope
305B:					
Paxton	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope small stones	Slight	Slight
305C:					
Paxton	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: slope

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
305D:					
Paxton----------	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
305E:					
Paxton----------	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
307B:					
Paxton----------	Severe: large stones	Severe: large stones	Severe: large stones	Slight	Moderate: large stones
307C:					
Paxton----------	Severe: large stones	Severe: large stones	Severe: large stones slope	Slight	Moderate: large stones slope
307D:					
Paxton----------	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Moderate: slope	Severe: slope
307E:					
Paxton----------	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Severe: slope	Severe: slope
310A:					
Woodbridge------	Moderate: wetness	Moderate: wetness	Moderate: small stones	Moderate: wetness	Moderate: wetness
310B:					
Woodbridge------	Moderate: wetness	Moderate: wetness	Moderate: slope small stones	Moderate: wetness	Moderate: wetness
310C:					
Woodbridge------	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: wetness	Moderate: slope wetness
311B:					
Woodbridge------	Moderate: large stones wetness	Moderate: large stones wetness	Severe: large stones	Moderate: wetness	Moderate: large stones wetness

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
311C: Woodbridge------	Moderate: large stones slope wetness	Moderate: large stones slope wetness	Severe: large stones slope	Moderate: wetness	Moderate: large stones slope wetness
312B: Woodbridge------	Severe: large stones	Severe: large stones	Severe: large stones	Moderate: wetness	Moderate: large stones wetness
312C: Woodbridge------	Severe: large stones	Severe: large stones	Severe: large stones slope	Moderate: wetness	Moderate: large stones slope wetness
315B: Scituate--------	Moderate: small stones wetness	Moderate: small stones wetness	Severe: small stones	Moderate: wetness	Moderate: small stones wetness
315C: Scituate--------	Moderate: slope small stones wetness	Moderate: slope small stones wetness	Severe: slope small stones	Moderate: wetness	Moderate: slope small stones wetness
317B: Scituate--------	Severe: large stones	Severe: large stones	Severe: large stones small stones	Moderate: large stones wetness	Severe: large stones
317C: Scituate--------	Severe: large stones	Severe: large stones	Severe: large stones slope small stones	Moderate: large stones wetness	Severe: large stones
320B: Birchwood-------	Moderate: percs slowly wetness	Moderate: percs slowly wetness	Moderate: percs slowly slope wetness	Moderate: wetness	Moderate: wetness
325D: Newport---------	Severe: slope	Severe: slope	Severe: slope small stones	Moderate: slope	Severe: slope

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
330B:					
Bernardston-----	Moderate: small stones wetness	Moderate: small stones wetness	Severe: small stones	Moderate: wetness	Slight
330C:					
Bernardston-----	Moderate: slope small stones wetness	Moderate: slope small stones wetness	Severe: slope small stones	Moderate: wetness	Moderate: slope
330D:					
Bernardston-----	Severe: slope	Severe: slope	Severe: slope small stones	Moderate: slope wetness	Severe: slope
330E:					
Bernardston-----	Severe: slope	Severe: slope	Severe: slope small stones	Severe: slope	Severe: slope
335B:					
Rainbow---------	Moderate: wetness	Moderate: wetness	Moderate: slope small stones	Moderate: wetness	Moderate: wetness
336B:					
Rainbow---------	Moderate: large stones wetness	Moderate: large stones wetness	Severe: large stones	Moderate: wetness	Moderate: large stones wetness
340B:					
Broadbrook------	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope small stones	Slight	Slight
340D:					
Broadbrook------	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
341B:					
Broadbrook------	Moderate: large stones	Moderate: large stones	Severe: large stones	Slight	Moderate: large stones
341C:					
Broadbrook------	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope	Slight	Moderate: large stones slope

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
341D:					
Broadbrook------	Severe: slope	Severe: slope	Severe: large stones slope	Moderate: slope	Severe: slope
345A:					
Pittstown-------	Moderate: wetness	Moderate: wetness	Moderate: small stones wetness	Moderate: wetness	Slight
345B:					
Pittstown-------	Moderate: wetness	Moderate: wetness	Moderate: slope small stones wetness	Moderate: wetness	Slight
405B:					
Charlton--------	Slight	Slight	Moderate: slope small stones	Slight	Slight
405C:					
Charlton--------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
407B:					
Charlton--------	Severe: large stones	Severe: large stones	Severe: large stones	Slight	Moderate: large stones
407C:					
Charlton--------	Severe: large stones	Severe: large stones	Severe: large stones slope	Slight	Moderate: large stones slope
407D:					
Charlton--------	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Moderate: slope	Severe: slope
415B:					
Narragansett----	Slight	Slight	Moderate: slope	Slight	Slight
415C:					
Narragansett----	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
415D:					
Narragansett----	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
416B:					
Narragansett----	Moderate: large stones	Moderate: large stones	Severe: large stones	Slight	Moderate: large stones
416C:					
Narragansett----	Moderate: large stones slope	Moderate: large stones slope	Severe: large stones slope	Slight	Moderate: large stones slope
416D:					
Narragansett----	Severe: slope	Severe: slope	Severe: large stones slope	Moderate: slope	Severe: slope
420B:					
Canton----------	Slight	Slight	Moderate: slope small stones	Slight	Moderate: large stones
420C:					
Canton----------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: large stones slope
420D:					
Canton----------	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
422B:					
Canton----------	Severe: large stones	Severe: large stones slope	Severe: large stones	Slight	Moderate: large stones
422C:					
Canton----------	Severe: large stones	Severe: large stones slope	Severe: large stones slope	Slight	Moderate: large stones slope
422D:					
Canton----------	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Moderate: slope	Severe: slope

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
424B:					
Canton	Severe: large stones	Severe: large stones	Severe: large stones	Moderate: large stones	Moderate: large stones
424C:					
Canton	Severe: large stones	Severe: large stones	Severe: large stones slope	Moderate: large stones	Moderate: large stones slope
424D:					
Canton	Severe: large stones slope	Severe: large stones slope	Severe: large stones slope	Moderate: large stones slope	Severe: slope
600:					
Pits, gravel	Severe: small stones too sandy	Severe: small stones too sandy	Severe: small stones too sandy	Severe: small stones too sandy	Severe: small stones too sandy droughty
601:					
Pits, quarry	---	---	---	---	---
602:					
Urban land	---	---	---	---	---
603:					
Urban land	---	---	---	---	---
621B:					
Scio	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Severe: erodes easily	Moderate: wetness
Urban land	---	---	---	---	---
622C:					
Paxton	Moderate: percs slowly slope	Moderate: percs slowly slope	Severe: slope	Slight	Moderate: slope
Urban land	---	---	---	---	---
623C:					
Woodbridge	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: wetness	Moderate: slope wetness
Urban land	---	---	---	---	---

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
624B:					
Haven-----------	Slight	Slight	Moderate: slope small stones	Moderate: erodes easily	Slight
Urban land------	---	---	---	---	---
626B:					
Merrimac--------	Slight	Slight	Moderate: slope small stones	Slight	Slight
Urban land------	---	---	---	---	---
627C:					
Newport---------	Moderate: slope small stones	Moderate: slope small stones	Severe: slope small stones	Slight	Moderate: slope small stones
Urban land------	---	---	---	---	---
629C:					
Canton----------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: large stones slope
Charlton--------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Urban land------	---	---	---	---	---
631C:					
Charlton--------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
Urban land------	---	---	---	---	---
Hollis----------	Severe: depth to rock	Severe: depth to rock	Severe: large stones depth to rock	Slight	Severe: depth to rock
652:					
Udorthents, refuse substratum-----	---	---	---	---	---

Table 8.—Recreational Development—continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
653:					
Udorthents, sandy	---	---	---	---	---
654:					
Udorthents, loamy	---	---	---	---	---
655:					
Udorthents, wet substratum	---	---	---	---	---
656:					
Udorthents	---	---	---	---	---
Urban land	---	---	---	---	---

Table 9.—Wildlife Habitat

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
1: Water	---	---	---	---	---	---	---	---	---	---
2A: Pootatuck	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
4A: Rippowam	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
6A: Scarboro	Very poor	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair
8A: Limerick	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
30B: Raynham	Poor	Poor	Fair	Fair	Fair	Good	Poor	Poor	Fair	Fair
32B: Wareham	Poor	Fair	Fair	Poor	Poor	Fair	Poor	Fair	Poor	Poor
33B: Raypol	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
36A: Saco	Very poor	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair
44A: Birdsall	Very poor	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Fair
51A: Swansea	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
52A: Freetown	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
53A: Freetown, ponded	Very poor	Very poor	Very poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
71B: Ridgebury	Very poor	Very poor	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair
73B: Whitman	Very poor	Very poor	Poor	Poor	Poor	Good	Poor	Very poor	Poor	Fair
97A: Suncook	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
98A: Winooski	Poor	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor
99A: Occum	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
103B:										
Charlton	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	---	---	---	---	---	---	---	---	---	---
103C:										
Charlton	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	---	---	---	---	---	---	---	---	---	---
103D:										
Charlton	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	---	---	---	---	---	---	---	---	---	---
104C:										
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	---	---	---	---	---	---	---	---	---	---
Charlton	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
104D:										
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	---	---	---	---	---	---	---	---	---	---
Charlton	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
105E:										
Rock outcrop	---	---	---	---	---	---	---	---	---	---
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
106C:										
Narragansett	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	---	---	---	---	---	---	---	---	---	---

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
106D:										
Narragansett	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Rock outcrop	---	---	---	---	---	---	---	---	---	---
223A:										
Scio	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
223B:										
Scio	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
251A:										
Haven	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
251B:										
Haven	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
253A:										
Hinckley	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
253B:										
Hinckley	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
253C:										
Hinckley	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
253D:										
Hinckley	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
253E:										
Hinckley	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
254A:										
Merrimac	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
254B:										
Merrimac	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
254C:										
Merrimac	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
255A:										
Windsor	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
255B:										
Windsor	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
255C:										
Windsor	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
256A:										
Deerfield	Poor	Fair	Fair	Poor	Poor	Poor	Poor	Fair	Poor	Poor
256B:										
Deerfield	Poor	Fair	Fair	Poor	Poor	Poor	Very poor	Fair	Poor	Very poor
259A:										
Carver	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
259B:										
Carver	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
259C:										
Carver	Very poor	Very poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
260B:										
Sudbury	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
261A:										
Tisbury	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
261B:										
Tisbury	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
262B:										
Quonset	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
262C:										
Quonset	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
262D:										
Quonset	Poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
262E:										
Quonset	Very poor	Poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
300B:										
Montauk	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
300C:										
Montauk	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
300D:										
Montauk	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
302B: Montauk---------	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Fair	Very poor
302C: Montauk---------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
302D: Montauk---------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
305B: Paxton----------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
305C: Paxton----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
305D: Paxton----------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
305E: Paxton----------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
307B: Paxton----------	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Fair	Very poor
307C: Paxton----------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
307D: Paxton----------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
307E: Paxton----------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
310A: Woodbridge------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
310B: Woodbridge------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
310C: Woodbridge------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
311B: Woodbridge------	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
311C: Woodbridge------	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
312B: Woodbridge	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Fair	Very poor
312C: Woodbridge	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
315B: Scituate	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
315C: Scituate	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
317B: Scituate	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Fair	Very poor
317C: Scituate	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
320B: Birchwood	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
325D: Newport	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
330B: Bernardston	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
330C: Bernardston	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
330D: Bernardston	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
330E: Bernardston	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
335B: Rainbow	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
336B: Rainbow	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
340B: Broadbrook	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
340D: Broadbrook------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
341B: Broadbrook------	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
341C: Broadbrook------	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
341D: Broadbrook------	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
345A: Pittstown-------	Fair	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor
345B: Pittstown-------	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
405B: Charlton--------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
405C: Charlton--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
407B: Charlton--------	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Fair	Very poor
407C: Charlton--------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
407D: Charlton--------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
415B: Narragansett----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
415C: Narragansett----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
415D: Narragansett----	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
416B: Narragansett----	Very poor	Poor	Good	Good	Good	Poor	Very poor	Poor	Good	Very poor
416C: Narragansett----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
416D:										
Narragansett----	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
420B:										
Canton----------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
420C:										
Canton----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
420D:										
Canton----------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
422B:										
Canton----------	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Fair	Very poor
422C:										
Canton----------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
422D:										
Canton----------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
424B:										
Canton----------	Very poor	Very poor	Good	Good	Good	Poor	Very poor	Poor	Fair	Very poor
424C:										
Canton----------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
424D:										
Canton----------	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Fair	Very poor
600:										
Pits, gravel----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
601:										
Pits, quarry----	---	---	---	---	---	---	---	---	---	---
602:										
Urban land------	---	---	---	---	---	---	---	---	---	---
603:										
Urban land------	---	---	---	---	---	---	---	---	---	---
621B:										
Scio------------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Urban land------	---	---	---	---	---	---	---	---	---	---
622C:										
Paxton----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Urban land------	---	---	---	---	---	---	---	---	---	---

Table 9.—Wildlife Habitat—continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
623C:										
Woodbridge	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Urban land	---	---	---	---	---	---	---	---	---	---
624B:										
Haven	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
Urban land	---	---	---	---	---	---	---	---	---	---
626B:										
Merrimac	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Urban land	---	---	---	---	---	---	---	---	---	---
627C:										
Newport	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Urban land	---	---	---	---	---	---	---	---	---	---
629C:										
Canton	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Charlton	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Urban land	---	---	---	---	---	---	---	---	---	---
631C:										
Charlton	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Urban land	---	---	---	---	---	---	---	---	---	---
Hollis	Very poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
652:										
Udorthents, refuse substratum	---	---	---	---	---	---	---	---	---	---
653:										
Udorthents, sandy	---	---	---	---	---	---	---	---	---	---
654:										
Udorthents, loamy	---	---	---	---	---	---	---	---	---	---
655:										
Udorthents, wet substratum	---	---	---	---	---	---	---	---	---	---
656:										
Udorthents	---	---	---	---	---	---	---	---	---	---
Urban land	---	---	---	---	---	---	---	---	---	---

Table 10.–Building Site Development

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1:						
Water----------	---	---	---	---	---	---
2A:						
Pootatuck-------	Severe: wetness cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: flooding	Moderate: flooding wetness
4A:						
Rippowam--------	Severe: wetness cutbanks cave	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding frost action wetness	Severe: flooding wetness
6A:						
Scarboro--------	Severe: excess humus ponding cutbanks cave	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
8A:						
Limerick--------	Severe: wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding frost action wetness	Severe: flooding wetness
30B:						
Raynham---------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
32B:						
Wareham---------	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
33B:						
Raypol----------	Severe: wetness cutbanks cave	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
36A:						
Saco------------	Severe: wetness cutbanks cave	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding frost action wetness	Severe: flooding wetness
44A:						
Birdsall--------	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: ponding
51A:						
Swansea---------	Severe: excess humus wetness cutbanks cave	Severe: low strength wetness	Severe: wetness	Severe: low strength wetness	Severe: frost action low strength wetness	Severe: excess humus wetness
52A:						
Freetown--------	Severe: excess humus wetness	Severe: low strength wetness	Severe: low strength wetness	Severe: low strength wetness	Severe: frost action low strength wetness	Severe: excess humus wetness
53A:						
Freetown, ponded	Severe: excess humus ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: low strength ponding	Severe: frost action low strength ponding	Severe: excess humus ponding
71B:						
Ridgebury-------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: wetness
73B:						
Whitman---------	Severe: ponding	Severe: ponding	Severe: ponding	Severe: ponding	Severe: frost action ponding	Severe: large stones ponding
97A:						
Suncook---------	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
98A:						
Winooski	Severe: wetness	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: flooding frost action	Severe: flooding
99A:						
Occum	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Severe: flooding
103B:						
Charlton	Slight	Slight	Slight	Moderate: slope	Slight	Moderate: large stones
Hollis	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop	---	---	---	---	---	---
103C:						
Charlton	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: large stones slope
Hollis	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop	---	---	---	---	---	---
103D:						
Charlton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Hollis	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Rock outcrop	---	---	---	---	---	---
104C:						
Hollis	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop	---	---	---	---	---	---
Charlton	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: large stones slope

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
104D:						
Hollis----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Rock outcrop----	---	---	---	---	---	---
Charlton--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
105E:						
Rock outcrop----	---	---	---	---	---	---
Hollis----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
106C:						
Narragansett----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: large stones slope
Hollis----------	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock
Rock outcrop----	---	---	---	---	---	---
106D:						
Narragansett----	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Hollis----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock
Rock outcrop----	---	---	---	---	---	---
223A:						
Scio------------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Severe: frost action	Moderate: wetness

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
223B:						
Scio------------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
251A:						
Haven-----------	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
251B:						
Haven-----------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
253A:						
Hinckley--------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
253B:						
Hinckley--------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
253C:						
Hinckley--------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
253D:						
Hinckley--------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
253E:						
Hinckley--------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
254A:						
Merrimac--------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Slight
254B:						
Merrimac--------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
254C:						
Merrimac--------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
255A:						
Windsor---------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
255B:						
Windsor---------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
255C:						
Windsor---------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope droughty
256A:						
Deerfield-------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Moderate: wetness droughty
256B:						
Deerfield-------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: wetness droughty
259A:						
Carver----------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: droughty
259B:						
Carver----------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
259C:						
Carver----------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
260B:						
Sudbury---------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Slight
261A:						
Tisbury---------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: wetness	Severe: frost action	Moderate: wetness

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
261B:						
Tisbury---------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
262B:						
Quonset---------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Severe: droughty
262C:						
Quonset---------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: droughty
262D:						
Quonset---------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
262E:						
Quonset---------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope droughty
300B:						
Montauk---------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Severe: droughty
300C:						
Montauk---------	Severe: wetness cutbanks cave	Moderate: slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Severe: droughty
300D:						
Montauk---------	Severe: slope wetness cutbanks cave	Severe: slope	Severe: slope wetness	Severe: slope	Severe: slope	Severe: slope droughty
302B:						
Montauk---------	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: large stones small stones

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
302C:						
Montauk	Severe: wetness cutbanks cave	Moderate: slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones slope small stones
302D:						
Montauk	Severe: slope wetness cutbanks cave	Severe: slope	Severe: slope wetness	Severe: slope	Severe: slope	Severe: slope
305B:						
Paxton	Moderate: wetness dense layer	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Moderate: frost action wetness	Slight
305C:						
Paxton	Moderate: slope wetness dense layer	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: slope
305D:						
Paxton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
305E:						
Paxton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
307B:						
Paxton	Moderate: wetness dense layer	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: large stones
307C:						
Paxton	Moderate: slope wetness dense layer	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones slope
307D:						
Paxton	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
307E:						
Paxton----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
310A:						
Woodbridge------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Severe: frost action	Moderate: wetness
310B:						
Woodbridge------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
310C:						
Woodbridge------	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Severe: frost action	Moderate: slope wetness
311B:						
Woodbridge------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: large stones wetness
311C:						
Woodbridge------	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Severe: frost action	Moderate: large stones slope wetness
312B:						
Woodbridge------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: large stones wetness
312C:						
Woodbridge------	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Severe: frost action	Moderate: large stones slope wetness
315B:						
Scituate--------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: small stones wetness

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
315C:						
Scituate--------	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: slope small stones wetness
317B:						
Scituate--------	Severe: wetness	Moderate: large stones wetness	Severe: wetness	Moderate: large stones slope wetness	Moderate: frost action wetness	Severe: large stones
317C:						
Scituate--------	Severe: wetness	Moderate: large stones slope wetness	Severe: wetness	Severe: slope	Moderate: frost action slope wetness	Severe: large stones
320B:						
Birchwood-------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: wetness
325D:						
Newport---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
330B:						
Bernardston-----	Moderate: wetness dense layer	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Moderate: frost action wetness	Slight
330C:						
Bernardston-----	Moderate: slope wetness dense layer	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: slope
330D:						
Bernardston-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
330E:						
Bernardston-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
335B:						
Rainbow---------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
336B:						
Rainbow---------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: large stones wetness
340B:						
Broadbrook------	Moderate: wetness dense layer	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Moderate: frost action wetness	Slight
340D:						
Broadbrook------	Moderate: slope wetness dense layer	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
341B:						
Broadbrook------	Moderate: wetness dense layer	Moderate: wetness	Moderate: wetness	Moderate: slope wetness	Moderate: frost action wetness	Moderate: large stones
341C:						
Broadbrook------	Moderate: slope wetness dense layer	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: large stones slope
341D:						
Broadbrook------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
345A:						
Pittstown-------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: frost action wetness	Slight
345B:						
Pittstown-------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Moderate: frost action wetness	Slight

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
405B:						
Charlton--------	Slight	Slight	Slight	Moderate: slope	Slight	Slight
405C:						
Charlton--------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
407B:						
Charlton--------	Slight	Slight	Slight	Moderate: slope	Slight	Moderate: large stones
407C:						
Charlton--------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: large stones slope
407D:						
Charlton--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
415B:						
Narragansett----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
415C:						
Narragansett----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: slope
415D:						
Narragansett----	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
416B:						
Narragansett----	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: large stones
416C:						
Narragansett----	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: frost action slope	Moderate: large stones slope
416D:						
Narragansett----	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
420B:						
Canton----------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: large stones
420C:						
Canton----------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: large stones slope
420D:						
Canton----------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
422B:						
Canton----------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: large stones
422C:						
Canton----------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: large stones slope
422D:						
Canton----------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
424B:						
Canton----------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: large stones
424C:						
Canton----------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: large stones slope
424D:						
Canton----------	Severe: slope cutbanks cave	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
600:						
Pits, gravel----	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: small stones too sandy droughty

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
601:						
Pits, quarry	---	---	---	---	---	---
602:						
Urban land	---	---	---	---	---	---
603:						
Urban land	---	---	---	---	---	---
621B:						
Scio	Severe: wetness cutbanks cave	Moderate: wetness	Severe: wetness	Moderate: slope wetness	Severe: frost action	Moderate: wetness
Urban land	---	---	---	---	---	---
622C:						
Paxton	Moderate: slope wetness dense layer	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: slope
Urban land	---	---	---	---	---	---
623C:						
Woodbridge	Severe: wetness	Moderate: slope wetness	Severe: wetness	Severe: slope	Severe: frost action	Moderate: slope wetness
Urban land	---	---	---	---	---	---
624B:						
Haven	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
Urban land	---	---	---	---	---	---
626B:						
Merrimac	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Slight
Urban land	---	---	---	---	---	---

Table 10.—Building Site Development—continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
627C:						
Newport	Moderate: slope wetness dense layer	Moderate: slope wetness	Moderate: slope wetness	Severe: slope	Moderate: frost action slope wetness	Moderate: slope small stones
Urban land	---	---	---	---	---	---
629C:						
Canton	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: large stones slope
Charlton	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Urban land	---	---	---	---	---	---
631C:						
Charlton	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Moderate: slope
Urban land	---	---	---	---	---	---
Hollis	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock	Severe: depth to rock
652:						
Udorthents, refuse substratum	---	---	---	---	---	---
653:						
Udorthents, sandy	---	---	---	---	---	---
654:						
Udorthents, loamy	---	---	---	---	---	---
655:						
Udorthents, wet substratum	---	---	---	---	---	---
656:						
Udorthents	---	---	---	---	---	---
Urban land	---	---	---	---	---	---

Table 11.—Sanitary Facilities

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1: Water	---	---	---	---	---
2A: Pootatuck	Severe: flooding wetness poor filter	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Poor: seepage too sandy
4A: Rippowam	Severe: flooding wetness poor filter	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Poor: seepage too sandy wetness
6A: Scarboro	Severe: ponding poor filter	Severe: seepage ponding	Severe: seepage too sandy ponding	Severe: seepage ponding	Poor: seepage small stones too sandy
8A: Limerick	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Poor: wetness
30B: Raynham	Severe: percs slowly wetness	Moderate: seepage slope	Severe: wetness	Severe: wetness	Poor: wetness
32B: Wareham	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
33B: Raypol	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
36A: Saco------------	Severe: flooding wetness	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Severe: flooding wetness	Poor: wetness
44A: Birdsall--------	Severe: percs slowly ponding	Slight	Severe: ponding	Severe: ponding	Poor: ponding
51A: Swansea---------	Severe: wetness poor filter	Severe: excess humus seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: excess humus seepage wetness
52A: Freetown--------	Severe: wetness	Severe: excess humus seepage wetness	Severe: excess humus seepage wetness	Severe: seepage wetness	Poor: excess humus wetness
53A: Freetown, ponded	Severe: ponding	Severe: excess humus seepage ponding	Severe: excess humus seepage ponding	Severe: seepage ponding	Poor: excess humus ponding
71B: Ridgebury-------	Severe: percs slowly wetness	Slight	Severe: wetness	Severe: wetness	Poor: wetness
73B: Whitman---------	Severe: percs slowly ponding	Moderate: slope	Severe: ponding	Severe: ponding	Poor: ponding
97A: Suncook---------	Severe: flooding poor filter	Severe: flooding seepage	Severe: flooding seepage wetness	Severe: flooding seepage	Poor: seepage too sandy

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
98A:					
Winooski	Severe: flooding wetness	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Fair: wetness
99A:					
Occum	Severe: flooding poor filter	Severe: flooding seepage	Severe: flooding seepage wetness	Severe: flooding seepage	Poor: seepage too sandy
103B:					
Charlton	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones
Hollis	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: thin layer depth to rock
Rock outcrop	---	---	---	---	---
103C:					
Charlton	Moderate: slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
Hollis	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: thin layer depth to rock
Rock outcrop	---	---	---	---	---
103D:					
Charlton	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
Hollis	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Poor: slope thin layer depth to rock
Rock outcrop	---	---	---	---	---

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
104C:					
Hollis----------	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: thin layer depth to rock
104C:					
Rock outcrop----	---	---	---	---	---
Charlton--------	Moderate: slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
104D:					
Hollis----------	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Poor: slope thin layer depth to rock
Rock outcrop----	---	---	---	---	---
Charlton--------	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
105E:					
Rock outcrop----	---	---	---	---	---
Hollis----------	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Poor: slope thin layer depth to rock
106C:					
Narragansett----	Moderate: slope poor filter	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones thin layer
Hollis----------	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: thin layer depth to rock
Rock outcrop----	---	---	---	---	---

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
106D:					
Narragansett----	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
Hollis----------	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: slope depth to rock	Poor: slope thin layer depth to rock
Rock outcrop----	---	---	---	---	---
223A:					
Scio------------	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Fair: thin layer wetness
223B:					
Scio------------	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Fair: thin layer wetness
251A:					
Haven-----------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
251B:					
Haven-----------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
253A:					
Hinckley--------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
253B:					
Hinckley--------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
253C:					
Hinckley--------	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
253D:					
Hinckley	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
253E:					
Hinckley	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
254A:					
Merrimac	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
254B:					
Merrimac	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
254C:					
Merrimac	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
255A:					
Windsor	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
255B:					
Windsor	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
255C:					
Windsor	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
256A:					
Deerfield-------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
256B:					
Deerfield-------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage too sandy
259A:					
Carver----------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
259B:					
Carver----------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
259C:					
Carver----------	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage too sandy
260B:					
Sudbury---------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
261A:					
Tisbury---------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy
261B:					
Tisbury---------	Severe: wetness poor filter	Severe: seepage wetness	Severe: seepage too sandy wetness	Severe: seepage wetness	Poor: seepage small stones too sandy

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
262B:					
Quonset---------	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
262C:					
Quonset---------	Severe: poor filter	Severe: seepage slope	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
262D:					
Quonset---------	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
262E:					
Quonset---------	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope too sandy	Severe: seepage slope	Poor: seepage slope too sandy
300B:					
Montauk---------	Severe: percs slowly wetness	Moderate: slope	Moderate: too sandy wetness	Moderate: wetness	Poor: seepage small stones
300C:					
Montauk---------	Severe: percs slowly wetness	Severe: slope	Moderate: slope too sandy wetness	Moderate: slope wetness	Poor: seepage small stones
300D:					
Montauk---------	Severe: percs slowly slope wetness	Severe: slope	Severe: slope	Severe: slope	Poor: seepage slope small stones
302B:					
Montauk---------	Severe: percs slowly wetness	Severe: seepage wetness	Moderate: too sandy wetness	Severe: seepage	Poor: seepage

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
302C:					
Montauk----------	Severe: percs slowly wetness	Severe: seepage slope wetness	Moderate: slope too sandy wetness	Severe: seepage	Poor: seepage
302D:					
Montauk----------	Severe: percs slowly slope wetness	Severe: seepage slope wetness	Severe: slope	Severe: seepage slope	Poor: seepage slope
305B:					
Paxton-----------	Severe: percs slowly	Moderate: slope	Moderate: wetness	Moderate: wetness	Fair: small stones wetness
305C:					
Paxton-----------	Severe: percs slowly	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Fair: slope small stones wetness
305D:					
Paxton-----------	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
305E:					
Paxton-----------	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
307B:					
Paxton-----------	Severe: percs slowly	Moderate: slope	Moderate: wetness	Moderate: wetness	Fair: small stones wetness
307C:					
Paxton-----------	Severe: percs slowly	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Fair: slope small stones wetness
307D:					
Paxton-----------	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
307E:					
Paxton----------	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
310A:					
Woodbridge------	Severe: percs slowly wetness	Slight	Severe: wetness	Moderate: wetness	Fair: small stones wetness
310B:					
Woodbridge------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: small stones wetness
310C:					
Woodbridge------	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Moderate: slope wetness	Fair: slope small stones wetness
311B:					
Woodbridge------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: small stones wetness
311C:					
Woodbridge------	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Moderate: slope wetness	Fair: slope small stones wetness
312B:					
Woodbridge------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: small stones wetness
312C:					
Woodbridge------	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Moderate: slope wetness	Fair: slope small stones wetness
315B:					
Scituate--------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Poor: small stones

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
315C:					
Scituate--------	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Moderate: slope wetness	Poor: small stones
317B:					
Scituate--------	Severe: percs slowly wetness	Moderate: large stones slope	Severe: wetness	Moderate: wetness	Poor: small stones
317C:					
Scituate--------	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Moderate: slope wetness	Poor: small stones
320B:					
Birchwood-------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: small stones wetness
325D:					
Newport---------	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
330B:					
Bernardston-----	Severe: percs slowly	Moderate: slope	Moderate: wetness	Moderate: wetness	Fair: small stones wetness
330C:					
Bernardston-----	Severe: percs slowly	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Fair: slope small stones wetness
330D:					
Bernardston-----	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
330E:					
Bernardston-----	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
335B:					
Rainbow---------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: small stones wetness
336B:					
Rainbow---------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: small stones wetness
340B:					
Broadbrook------	Severe: percs slowly	Moderate: slope	Moderate: wetness	Moderate: wetness	Fair: small stones wetness
340D:					
Broadbrook------	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
341B:					
Broadbrook------	Severe: percs slowly	Moderate: slope	Moderate: wetness	Moderate: wetness	Fair: small stones wetness
341C:					
Broadbrook------	Severe: percs slowly	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Fair: slope small stones wetness
341D:					
Broadbrook------	Severe: percs slowly slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
345A:					
Pittstown-------	Severe: percs slowly wetness	Slight	Severe: wetness	Moderate: wetness	Fair: small stones
345B:					
Pittstown-------	Severe: percs slowly wetness	Moderate: slope	Severe: wetness	Moderate: wetness	Fair: small stones
405B:					
Charlton--------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
405C:					
Charlton--------	Moderate: slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
407B:					
Charlton--------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones
407C:					
Charlton--------	Moderate: slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
407D:					
Charlton--------	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
415B:					
Narragansett----	Moderate: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones
415C:					
Narragansett----	Moderate: slope poor filter	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
415D:					
Narragansett----	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope
416B:					
Narragansett----	Moderate: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Fair: small stones thin layer
416C:					
Narragansett----	Moderate: slope poor filter	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones thin layer
416D:					
Narragansett----	Severe: slope	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: slope

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
420B:					
Canton----------	Severe: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Poor: seepage small stones
420C:					
Canton----------	Severe: poor filter	Severe: seepage slope	Severe: seepage	Severe: seepage	Poor: seepage small stones
420D:					
Canton----------	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: seepage slope small stones
422B:					
Canton----------	Severe: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Poor: seepage
422C:					
Canton----------	Severe: poor filter	Severe: seepage slope	Severe: seepage	Severe: seepage	Poor: seepage
422D:					
Canton----------	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: seepage slope
424B:					
Canton----------	Severe: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Poor: seepage
424C:					
Canton----------	Severe: poor filter	Severe: seepage slope	Severe: seepage	Severe: seepage	Poor: seepage
424D:					
Canton----------	Severe: slope poor filter	Severe: seepage slope	Severe: seepage slope	Severe: seepage slope	Poor: seepage slope

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
600:					
Pits, gravel	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Slight	Poor: seepage small stones too sandy
601:					
Pits, quarry	---	---	---	---	---
602:					
Urban land	---	---	---	---	---
603:					
Urban land	---	---	---	---	---
621B:					
Scio	Severe: wetness	Severe: seepage wetness	Severe: seepage wetness	Severe: wetness	Fair: thin layer wetness
Urban land	---	---	---	---	---
622C:					
Paxton	Severe: percs slowly	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Fair: slope small stones wetness
Urban land	---	---	---	---	---
623C:					
Woodbridge	Severe: percs slowly wetness	Severe: slope	Severe: wetness	Moderate: slope wetness	Fair: slope small stones wetness
Urban land	---	---	---	---	---
624B:					
Haven	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
Urban land	---	---	---	---	---
626B:					
Merrimac	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
626B:					
Urban land	---	---	---	---	---
627C:					
Newport	Severe: percs slowly	Severe: slope	Moderate: slope wetness	Moderate: slope wetness	Fair: slope small stones wetness
Urban land	---	---	---	---	---
629C:					
Canton	Severe: poor filter	Severe: seepage slope	Severe: seepage	Severe: seepage	Poor: seepage small stones
Charlton	Moderate: slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
Urban land	---	---	---	---	---
631C:					
Charlton	Moderate: slope	Severe: seepage slope	Severe: seepage	Severe: seepage	Fair: slope small stones
Urban land	---	---	---	---	---
Hollis	Severe: depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Severe: depth to rock	Poor: thin layer depth to rock
652:					
Udorthents, refuse substratum	---	---	---	---	---
653:					
Udorthents, sandy	---	---	---	---	---
654:					
Udorthents, loamy	---	---	---	---	---

Table 11.—Sanitary Facilities—continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
655:					
Udorthents, wet substratum-----	---	---	---	---	---
656:					
Udorthents------	---	---	---	---	---
Urban land------	---	---	---	---	---

Table 12.—Construction Materials

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1:				
Water	---	---	---	---
2A:				
Pootatuck	Fair: wetness	Probable	Improbable: too sandy	Fair: thin layer
4A:				
Rippowam	Poor: wetness	Probable	Improbable: too sandy	Poor: wetness
6A:				
Scarboro	Poor: wetness	Probable	Improbable: too sandy	Poor: area reclaim small stones too sandy
8A:				
Limerick	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
30B:				
Raynham	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
32B:				
Wareham	Poor: wetness	Probable	Probable	Poor: area reclaim too sandy wetness
33B:				
Raypol	Poor: wetness	Probable	Probable	Poor: area reclaim small stones wetness
36A:				
Saco	Poor: wetness	Probable	Improbable: too sandy	Poor: wetness
44A:				
Birdsall	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
51A:				
Swansea	Poor: wetness	Probable	Improbable: excess fines	Poor: excess humus wetness
52A:				
Freetown	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	---
53A:				
Freetown, ponded	Poor: low strength wetness	Improbable: excess fines	Improbable: excess fines	Poor: excess humus wetness

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
71B:				
Ridgebury-------	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones wetness
73B:				
Whitman---------	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim large stones wetness
97A:				
Suncook---------	Good	Probable	Improbable: too sandy	Poor: too sandy
98A:				
Winooski--------	Fair: low strength wetness	Improbable: excess fines	Improbable: excess fines	Good
99A:				
Occum-----------	Good	Probable	Improbable: too sandy	Fair: area reclaim thin layer
103B:				
Charlton--------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Rock outcrop----	---	---	---	---
103C:				
Charlton--------	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Rock outcrop----	---	---	---	---
103D:				
Charlton--------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Rock outcrop----	---	---	---	---
104C:				
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Rock outcrop----	---	---	---	---
Charlton--------	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
104D:				
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Rock outcrop----	---	---	---	---
Charlton--------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
105E:				
Rock outcrop----	---	---	---	---
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
106C:				
Narragansett----	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
Rock outcrop----	---	---	---	---
106D:				
Narragansett----	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Hollis----------	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope depth to rock
Rock outcrop----	---	---	---	---
223A:				
Scio------------	Fair: wetness	Probable	Probable	Poor: area reclaim
223B:				
Scio------------	Fair: wetness	Probable	Probable	Poor: area reclaim
251A:				
Haven-----------	Good	Probable	Probable	Poor: area reclaim too sandy
251B:				
Haven-----------	Good	Probable	Probable	Poor: area reclaim too sandy
253A:				
Hinckley--------	Good	Probable	Probable	Poor: area reclaim small stones too sandy
253B:				
Hinckley--------	Good	Probable	Probable	Poor: area reclaim small stones too sandy

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
253C:				
Hinckley--------	Good	Probable	Probable	Poor: area reclaim small stones too sandy
253D:				
Hinckley--------	Fair: slope	Probable	Probable	Poor: slope small stones too sandy
253E:				
Hinckley--------	Poor: slope	Probable	Probable	Poor: slope small stones too sandy
254A:				
Merrimac--------	Good	Probable	Probable	Poor: area reclaim small stones
254B:				
Merrimac--------	Good	Probable	Probable	Poor: area reclaim small stones
254C:				
Merrimac--------	Good	Probable	Probable	Poor: area reclaim small stones
255A:				
Windsor---------	Good	Probable	Improbable: too sandy	Poor: too sandy
255B:				
Windsor---------	Good	Probable	Improbable: too sandy	Poor: too sandy
255C:				
Windsor---------	Good	Probable	Improbable: too sandy	Poor: too sandy
256A:				
Deerfield-------	Fair: wetness	Probable	Improbable: excess fines	Poor: too sandy
256B:				
Deerfield-------	Fair: wetness	Probable	Improbable: excess fines	Poor: too sandy
259A:				
Carver----------	Good	Probable	Improbable: too sandy	Fair: small stones too sandy
259B:				
Carver----------	Good	Probable	Improbable: too sandy	Fair: small stones too sandy

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
259C:				
Carver----------	Good	Probable	Improbable: too sandy	Fair: slope small stones too sandy
260B:				
Sudbury---------	Fair: wetness	Probable	Probable	Poor: area reclaim small stones too sandy
261A:				
Tisbury---------	Fair: wetness	Probable	Probable	Poor: area reclaim
261B:				
Tisbury---------	Fair: wetness	Probable	Probable	Poor: area reclaim
262B:				
Quonset---------	Good	Probable	Probable	Poor: area reclaim small stones
262C:				
Quonset---------	Good	Probable	Probable	Poor: area reclaim small stones
262D:				
Quonset---------	Fair: slope	Probable	Probable	Poor: area reclaim slope small stones
262E:				
Quonset---------	Poor: slope	Probable	Probable	Poor: area reclaim slope small stones
300B:				
Montauk---------	Fair: wetness	Probable	Probable	Poor: area reclaim small stones
300C:				
Montauk---------	Fair: wetness	Probable	Probable	Poor: area reclaim small stones
300D:				
Montauk---------	Fair: slope wetness	Probable	Probable	Poor: area reclaim slope small stones
302B:				
Montauk---------	Fair: wetness	Probable	Probable	Poor: small stones
302C:				
Montauk---------	Fair: wetness	Probable	Probable	Poor: small stones

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
302D:				
Montauk---------	Fair: slope wetness	Probable	Probable	Poor: slope small stones
305B:				
Paxton----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
305C:				
Paxton----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
305D:				
Paxton----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
305E:				
Paxton----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
307B:				
Paxton----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
307C:				
Paxton----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
307D:				
Paxton----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
307E:				
Paxton----------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
310A:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
310B:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
310C:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
311B:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
311C:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
312B:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
312C:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
315B:				
Scituate--------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
315C:				
Scituate--------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
317B:				
Scituate--------	Fair: large stones wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
317C:				
Scituate--------	Fair: large stones wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
320B:				
Birchwood-------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim too sandy
325D:				
Newport---------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
330B:				
Bernardston-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
330C:				
Bernardston-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
330D:				
Bernardston-----	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones
330E:				
Bernardston-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
335B:				
Rainbow---------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
336B:				
Rainbow---------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
340B:				
Broadbrook------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
340D:				
Broadbrook------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
341B:				
Broadbrook------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
341C:				
Broadbrook------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
341D:				
Broadbrook------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
345A:				
Pittstown-------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
345B:				
Pittstown-------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
405B:				
Charlton--------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
405C:				
Charlton--------	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones
407B:				
Charlton--------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
407C:				
Charlton--------	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
407D:				
Charlton--------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
415B:				
Narragansett----	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
415C:				
Narragansett----	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
415D:				
Narragansett----	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
416B:				
Narragansett----	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim small stones
416C:				
Narragansett----	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
416D:				
Narragansett----	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
420B:				
Canton----------	Good	Probable	Probable	Poor: area reclaim small stones
420C:				
Canton----------	Good	Probable	Probable	Poor: area reclaim small stones
420D:				
Canton----------	Fair: slope	Probable	Probable	Poor: area reclaim slope small stones
422B:				
Canton----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
422C:				
Canton----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim small stones
422D:				
Canton----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim slope small stones

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
424B:				
Canton----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim large stones
424C:				
Canton----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim large stones
424D:				
Canton----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim large stones slope
600:				
Pits, gravel----	Good	Probable	Probable	Poor: area reclaim small stones too sandy
601:				
Pits, quarry----	---	---	---	---
602:				
Urban land------	---	---	---	---
603:				
Urban land------	---	---	---	---
621B:				
Scio------------	Fair: wetness	Probable	Probable	Poor: area reclaim
Urban land------	---	---	---	---
622C:				
Paxton----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
Urban land------	---	---	---	---
623C:				
Woodbridge------	Fair: wetness	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
Urban land------	---	---	---	---
624B:				
Haven-----------	Good	Probable	Probable	Poor: area reclaim too sandy
Urban land------	---	---	---	---
626B:				
Merrimac--------	Good	Probable	Probable	Poor: area reclaim small stones

Table 12.—Construction Materials—continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
626B:				
Urban land	---	---	---	---
627C:				
Newport	Good	Improbable: excess fines	Improbable: excess fines	Fair: area reclaim slope small stones
Urban land	---	---	---	---
629C:				
Canton	Good	Probable	Probable	Poor: area reclaim small stones
Charlton	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones
Urban land	---	---	---	---
631C:				
Charlton	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope small stones
Urban land	---	---	---	---
Hollis	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock
652:				
Udorthents, refuse substratum	---	---	---	---
653:				
Udorthents, sandy	---	---	---	---
654:				
Udorthents, loamy	---	---	---	---
655:				
Udorthents, wet substratum	---	---	---	---
656:				
Udorthents	---	---	---	---
Urban land	---	---	---	---

Table 13.—Water Management

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1: Water	---	---	---	---	---	---	---
2A: Pootatuck	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: flooding cutbanks cave	Limitation: flooding wetness	Limitation: too sandy wetness	Favorable
4A: Rippowam	Severe: seepage	Severe: seepage piping wetness	Severe: cutbanks cave	Limitation: flooding frost action cutbanks cave	Limitation: flooding wetness	Limitation: poor outlets too sandy wetness	Limitation: wetness
6A: Scarboro	Severe: seepage	Severe: seepage piping ponding	Severe: cutbanks cave	Limitation: frost action ponding cutbanks cave	Limitation: fast intake ponding droughty	Limitation: too sandy ponding	Limitation: wetness droughty
8A: Limerick	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Limitation: flooding frost action	Limitation: erodes easily flooding wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
30B: Raynham	Moderate: seepage	Severe: piping wetness	Severe: slow refill	Limitation: frost action percs slowly	Limitation: percs slowly wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
32B: Wareham	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Limitation: cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: wetness droughty
33B: Raypol	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Limitation: frost action cutbanks cave	Limitation: erodes easily wetness	Limitation: erodes easily too sandy wetness	Limitation: erodes easily wetness

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
36A:							
Saco------------	Moderate: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: flooding frost action poor outlets	Limitation: flooding wetness	Limitation: poor outlets wetness	Limitation: wetness
44A:							
Birdsall--------	Slight	Severe: piping ponding	Severe: slow refill cutbanks cave	Limitation: frost action percs slowly	Limitation: erodes easily percs slowly ponding	Limitation: erodes easily percs slowly ponding	Limitation: erodes easily percs slowly wetness
51A:							
Swansea---------	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Limitation: frost action cutbanks cave	Limitation: wetness	Limitation: too sandy wetness	Limitation: wetness
52A:							
Freetown--------	Severe: seepage	Severe: excess humus wetness	Slight	Limitation: frost action	Limitation: wetness	Limitation: wetness	Limitation: wetness
53A:							
Freetown, ponded	Severe: seepage	Severe: excess humus ponding	Slight	Limitation: frost action ponding	Limitation: ponding	Limitation: ponding	Limitation: wetness
71B:							
Ridgebury-------	Slight	Severe: piping wetness	Severe: no water	Limitation: frost action percs slowly	Limitation: percs slowly rooting depth wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth wetness
73B:							
Whitman---------	Slight	Severe: piping ponding	Severe: no water	Limitation: frost action percs slowly	Limitation: percs slowly rooting depth ponding	Limitation: large stones percs slowly wetness	Limitation: large stones percs slowly wetness
97A:							
Suncook---------	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Limitation: deep to water	Limitation: fast intake flooding droughty	Limitation: too sandy	Limitation: droughty

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
98A:							
Winooski	Severe: seepage	Severe: piping	Severe: cutbanks cave	Limitation: flooding frost action cutbanks cave	Limitation: erodes easily flooding wetness	Limitation: erodes easily wetness	Limitation: erodes easily
99A:							
Occum	Severe: seepage	Severe: seepage piping	Severe: cutbanks cave	Limitation: deep to water	Limitation: flooding	Limitation: too sandy	Favorable
103B:							
Charlton	Severe: seepage	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable	Favorable
Hollis	Severe: depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
Rock outcrop	---	---	---	---	---	---	---
103C:							
Charlton	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Hollis	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop	---	---	---	---	---	---	---
103D:							
Charlton	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Hollis	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop	---	---	---	---	---	---	---

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
104C:							
Hollis----------	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop----	---	---	---	---	---	---	---
Charlton--------	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
104D:							
Hollis----------	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop----	---	---	---	---	---	---	---
Charlton--------	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
105E:							
Rock outcrop----	---	---	---	---	---	---	---
Hollis----------	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
106C:							
Narragansett----	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
Hollis----------	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop----	---	---	---	---	---	---	---

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
106D:							
Narragansett----	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
Hollis----------	Severe: slope depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: slope depth to rock	Limitation: slope depth to rock droughty
Rock outcrop----	---	---	---	---	---	---	---
223A:							
Scio------------	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: frost action	Limitation: wetness soil blowing	Limitation: erodes easily wetness	Limitation: erodes easily
223B:							
Scio------------	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: frost action slope	Limitation: slope wetness soil blowing	Limitation: erodes easily wetness	Limitation: erodes easily
251A:							
Haven-----------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: erodes easily	Limitation: erodes easily too sandy	Limitation: erodes easily
251B:							
Haven-----------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily too sandy	Limitation: erodes easily
253A:							
Hinckley--------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: large stones too sandy	Limitation: large stones droughty
253B:							
Hinckley--------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones too sandy	Limitation: large stones droughty

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
253C:							
Hinckley--------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
253D:							
Hinckley--------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
253E:							
Hinckley--------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
254A:							
Merrimac--------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Favorable	Limitation: too sandy	Favorable
254B:							
Merrimac--------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: too sandy	Favorable
254C:							
Merrimac--------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope too sandy	Limitation: slope
255A:							
Windsor---------	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: too sandy	Limitation: droughty
255B:							
Windsor---------	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy	Limitation: droughty
255C:							
Windsor---------	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy	Limitation: slope droughty

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
256A:							
Deerfield-------	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Limitation: cutbanks cave	Limitation: fast intake wetness droughty	Limitation: too sandy wetness	Limitation: droughty
256B:							
Deerfield-------	Severe: seepage	Severe: seepage	Severe: cutbanks cave	Limitation: slope cutbanks cave	Limitation: slope wetness droughty	Limitation: too sandy wetness	Limitation: droughty
259A:							
Carver----------	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: too sandy	Limitation: droughty
259B:							
Carver----------	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: too sandy	Limitation: droughty
259C:							
Carver----------	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: deep to water	Limitation: fast intake slope droughty	Limitation: slope too sandy	Limitation: slope droughty
260B:							
Sudbury---------	Severe: seepage	Severe: seepage wetness	Severe: cutbanks cave	Limitation: slope cutbanks cave	Limitation: slope wetness	Limitation: too sandy wetness	Favorable
261A:							
Tisbury---------	Severe: seepage	Severe: seepage wetness	Moderate: cutbanks cave deep to water	Limitation: frost action cutbanks cave	Limitation: erodes easily wetness	Limitation: erodes easily too sandy wetness	Limitation: erodes easily
261B:							
Tisbury---------	Severe: seepage	Severe: seepage wetness	Moderate: cutbanks cave deep to water	Limitation: frost action slope cutbanks cave	Limitation: erodes easily slope wetness	Limitation: erodes easily too sandy wetness	Limitation: erodes easily

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
262B: Quonset	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: too sandy	Limitation: droughty
262C: Quonset	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: slope too sandy	Limitation: slope droughty
262D: Quonset	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: slope too sandy	Limitation: slope droughty
262E: Quonset	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: slope too sandy	Limitation: slope droughty
300B: Montauk	Moderate: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope cutbanks cave	Limitation: slope wetness droughty	Limitation: too sandy wetness	Limitation: rooting depth droughty
300C: Montauk	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope cutbanks cave	Limitation: slope wetness droughty	Limitation: slope too sandy wetness	Limitation: rooting depth slope droughty
300D: Montauk	Severe: slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope cutbanks cave	Limitation: slope wetness droughty	Limitation: slope too sandy wetness	Limitation: rooting depth slope droughty
302B: Montauk	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope cutbanks cave	Limitation: slope wetness droughty	Limitation: too sandy wetness	Limitation: rooting depth droughty
302C: Montauk	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope cutbanks cave	Limitation: slope wetness droughty	Limitation: slope too sandy wetness	Limitation: rooting depth slope droughty

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
302D: Montauk----------	Severe: seepage slope	Severe: seepage piping	Severe: no water	Limitation: percs slowly slope cutbanks cave	Limitation: slope wetness droughty	Limitation: slope too sandy wetness	Limitation: rooting depth slope droughty
305B: Paxton----------	Moderate: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly	Limitation: percs slowly rooting depth
305C: Paxton----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
305D: Paxton----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
305E: Paxton----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
307B: Paxton----------	Moderate: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly	Limitation: percs slowly rooting depth
307C: Paxton----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
307D: Paxton----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
307E:							
Paxton----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
310A:							
Woodbridge------	Slight	Severe: piping	Severe: no water	Limitation: frost action percs slowly	Limitation: percs slowly rooting depth wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth
310B:							
Woodbridge------	Moderate: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth
310C:							
Woodbridge------	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly slope wetness	Limitation: percs slowly rooting depth slope
311B:							
Woodbridge------	Moderate: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth
311C:							
Woodbridge------	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly slope wetness	Limitation: percs slowly rooting depth slope
312B:							
Woodbridge------	Moderate: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth
312C:							
Woodbridge------	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly slope wetness	Limitation: percs slowly rooting depth slope

Table 13.—Water Management—continued

	Limitations for--			Features affecting--			
Map symbol and soil name	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
315B: Scituate--------	Moderate: slope	Moderate: piping	Severe: no water	Limitation: percs slowly slope	Limitation: slope wetness droughty	Limitation: large stones percs slowly wetness	Limitation: rooting depth droughty
315C: Scituate--------	Severe: slope	Moderate: piping	Severe: no water	Limitation: percs slowly slope	Limitation: slope wetness droughty	Limitation: large stones slope wetness	Limitation: large stones slope droughty
317B: Scituate--------	Moderate: slope	Severe: seepage	Severe: no water	Limitation: percs slowly slope	Limitation: large stones slope wetness	Limitation: large stones percs slowly wetness	Limitation: large stones rooting depth droughty
317C: Scituate--------	Severe: slope	Severe: seepage	Severe: no water	Limitation: percs slowly slope	Limitation: large stones slope wetness	Limitation: large stones slope wetness	Limitation: large stones slope droughty
320B: Birchwood-------	Moderate: slope	Moderate: piping wetness	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly rooting depth wetness	Limitation: percs slowly rooting depth
325D: Newport---------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: erodes easily percs slowly slope	Limitation: erodes easily rooting depth slope
330B: Bernardston-----	Moderate: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly	Limitation: percs slowly rooting depth
330C: Bernardston-----	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
330D:							
Bernardston-----	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
330E:							
Bernardston-----	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
335B:							
Rainbow---------	Moderate: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly rooting depth
336B:							
Rainbow---------	Moderate: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: erodes easily percs slowly wetness	Limitation: erodes easily percs slowly rooting depth
340B:							
Broadbrook------	Moderate: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly rooting depth
340D:							
Broadbrook------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: erodes easily percs slowly slope	Limitation: erodes easily rooting depth slope
341B:							
Broadbrook------	Moderate: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: erodes easily percs slowly	Limitation: erodes easily percs slowly rooting depth
341C:							
Broadbrook------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: erodes easily percs slowly slope	Limitation: erodes easily rooting depth slope

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
341D:							
Broadbrook------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: erodes easily percs slowly slope	Limitation: erodes easily rooting depth slope
345A:							
Pittstown-------	Slight	Severe: piping	Severe: no water	Limitation: percs slowly	Limitation: percs slowly rooting depth wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth wetness
345B:							
Pittstown-------	Moderate: slope	Severe: piping	Severe: no water	Limitation: percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly wetness	Limitation: percs slowly rooting depth wetness
405B:							
Charlton--------	Severe: seepage	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable	Favorable
405C:							
Charlton--------	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
407B:							
Charlton--------	Severe: seepage	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Favorable	Favorable
407C:							
Charlton--------	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
407D:							
Charlton--------	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
415B:							
Narragansett----	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily too sandy	Limitation: erodes easily

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
415C:							
Narragansett----	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
415D:							
Narragansett----	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
416B:							
Narragansett----	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily too sandy	Limitation: erodes easily
416C:							
Narragansett----	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
416D:							
Narragansett----	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: erodes easily slope too sandy	Limitation: erodes easily slope
420B:							
Canton----------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones too sandy	Limitation: large stones droughty
420C:							
Canton----------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
420D:							
Canton----------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
422B: Canton----------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: large stones too sandy	Limitation: large stones
422C: Canton----------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: large stones slope too sandy	Limitation: large stones slope
422D: Canton----------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: large stones slope too sandy	Limitation: large stones slope
424B: Canton----------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: large stones too sandy	Limitation: large stones
424C: Canton----------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: large stones slope too sandy	Limitation: large stones slope
424D: Canton----------	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: large stones slope too sandy	Limitation: large stones slope
600: Pits, gravel----	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: fast intake droughty	Limitation: large stones too sandy	Limitation: large stones droughty
601: Pits, quarry----	---	---	---	---	---	---	---
602: Urban land------	---	---	---	---	---	---	---
603: Urban land------	---	---	---	---	---	---	---

Table 13.—Water Management—continued

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
621B:							
Scio------------	Severe: seepage	Severe: piping wetness	Severe: cutbanks cave	Limitation: frost action slope	Limitation: slope wetness soil blowing	Limitation: erodes easily wetness	Limitation: erodes easily
Urban land------	---	---	---	---	---	---	---
622C:							
Paxton----------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: percs slowly slope	Limitation: percs slowly rooting depth slope
Urban land------	---	---	---	---	---	---	---
623C:							
Woodbridge------	Severe: slope	Severe: piping	Severe: no water	Limitation: frost action percs slowly slope	Limitation: percs slowly slope wetness	Limitation: percs slowly slope wetness	Limitation: percs slowly rooting depth slope
Urban land------	---	---	---	---	---	---	---
624B:							
Haven-----------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope	Limitation: erodes easily too sandy	Limitation: erodes easily
Urban land------	---	---	---	---	---	---	---
626B:							
Merrimac--------	Severe: seepage	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: too sandy	Favorable
Urban land------	---	---	---	---	---	---	---
627C:							
Newport---------	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: percs slowly rooting depth slope	Limitation: erodes easily percs slowly slope	Limitation: erodes easily rooting depth slope
Urban land------	---	---	---	---	---	---	---

Table 13.—Water Management—continued

	Limitations for--			Features affecting--			
Map symbol and soil name	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
629C:							
Canton	Severe: seepage slope	Severe: seepage	Severe: no water	Limitation: deep to water	Limitation: slope droughty	Limitation: large stones slope too sandy	Limitation: large stones slope droughty
Charlton	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Urban land	---	---	---	---	---	---	---
631C:							
Charlton	Severe: seepage slope	Moderate: seepage piping	Severe: no water	Limitation: deep to water	Limitation: slope	Limitation: slope	Limitation: slope
Urban land	---	---	---	---	---	---	---
Hollis	Severe: depth to rock	Severe: piping thin layer	Severe: no water	Limitation: deep to water	Limitation: slope depth to rock droughty	Limitation: depth to rock	Limitation: depth to rock droughty
652:							
Udorthents, refuse substratum	---	---	---	---	---	---	---
653:							
Udorthents, sandy	---	---	---	---	---	---	---
654:							
Udorthents, loamy	---	---	---	---	---	---	---
655:							
Udorthents, wet substratum	---	---	---	---	---	---	---
656:							
Udorthents	---	---	---	---	---	---	---
Urban land	---	---	---	---	---	---	---

Table 14.—Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
2A:												
Pootatuck-------	0-7	Fine sandy loam	ML, SM	A-2, A-4	0	0	95-100	80-100	55-95	30-75	15-25	NP-4
	7-15	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	95-100	80-100	55-85	30-50	15-20	NP-2
	15-23	Sandy loam, fine sandy loam	SM	A-2, A-4	0	0	95-100	80-100	55-85	30-50	15-20	NP-2
	23-29	Coarse sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	70-100	45-100	25-75	0-25	0-14	NP
	29-65	Stratified coarse sand to gravelly coarse sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	60-100	36-100	20-50	0-25	0-14	NP
4A:												
Rippowam--------	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	0	95-100	80-100	55-95	30-75	15-25	NP-4
	7-18	Fine sandy loam, sandy loam	SM	A-2, A-4	0	0	95-100	80-100	55-85	30-50	15-20	NP-2
	18-40	Sandy loam, fine sandy loam	SM	A-2, A-4	0	0	95-100	80-100	55-85	30-50	15-20	NP-2
	40-65	Stratified sand to fine sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	95-100	80-100	25-75	0-25	0-14	NP
6A:												
Scarboro--------	0-3	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	3-11	Mucky fine sandy loam	SM, SP-SM	A-1, A-2, A-3, A-4	0	0	95-100	85-100	45-85	5-50	0-37	NP
	11-21	Sand, fine sand, loamy sand	SP-SM, SM	A-1, A-2, A-3	0	0	95-100	85-100	45-80	5-35	0-31	NP
	21-29	Very gravelly coarse sand, gravelly coarse sand, loamy sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	40-95	40-95	30-80	2-35	0-14	NP
	29-65	Gravelly coarse sand	SP-SM, SP, SM	A-1, A-2, A-3	0	0	50-100	50-100	15-80	0-35	0-14	NP
8A:												
Limerick--------	0-3	Silt loam	ML	A-4	0	0	100	100	95-100	80-95	20-33	NP
	3-40	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	80-95	0-31	NP
	40-65	Loamy fine sand, very fine sandy loam, silt loam	ML	A-4	0	0	100	100	95-100	80-95	0-27	NP
30B:												
Raynham---------	0-8	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	80-100	55-95	15-25	NP-5
	8-33	Silt loam, silt, very fine sandy loam	ML, CL-ML	A-4	0	0	100	95-100	80-100	55-95	15-25	NP-5

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
	33-65	Silt, silt loam, very fine sandy loam	ML, CL-ML	A-4	0	0	100	95-100	80-100	80-95	15-25	NP-5
32B:												
Wareham---------	0-10	Loamy fine sand	SP-SM, SM	A-1, A-2	0	0	85-100	75-100	40-85	10-35	0-27	NP
	10-24	Loamy sand, loamy fine sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-100	35-85	5-35	0-20	NP
	24-34	Stratified sand to fine sand, loamy sand, coarse sand	SP-SM, SP, SM	A-1, A-2, A-3	0	0	85-100	75-100	25-75	0-30	0-18	NP
	34-65	Stratified coarse sand to sand, loamy sand, very gravelly sand	GP, GM, SM, SP	A-1, A-2, A-3	0	0	85-100	75-100	10-75	0-30	0-14	NP
33B:												
Raypol----------	0-9	Silt loam	ML	A-4	0	0	90-100	85-100	75-100	65-90	15-30	NP-7
	9-19	Silt loam, very fine sandy loam, loam	ML	A-4	0	0	90-100	85-100	75-100	65-90	15-25	NP-5
	19-48	Very gravelly loamy sand	GP, GM, SM, SP	A-1, A-2, A-3	0	0	45-100	30-100	15-80	2-30	0-14	NP
	48-65	Very gravelly loamy sand	SM, GP, GM, SP	A-1, A-2, A-3	0	0	45-100	30-100	15-80	2-30	0-14	NP
36A:												
Saco------------	0-13	Mucky silt loam	OL, ML	A-4, A-7	0	0	100	100	95-100	70-95	15-50	5-20
	13-30	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	70-95	15-40	NP-10
	30-45	Silt loam, loamy sand	ML	A-4	0	0	100	100	90-100	70-95	15-40	NP-10
	45-65	Loamy sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	100	100	25-85	0-30	0-34	NP
44A:												
Birdsall--------	0-15	Mucky silt loam	CL-ML, OL, ML	A-4	0	0	100	100	90-100	70-90	15-30	NP-7
	15-30	Silt loam, very fine sandy loam	CL-ML, ML	A-4	0	0	100	95-100	90-100	70-90	15-30	NP-7
	30-65	Silt loam, very fine sandy loam	CL-ML, ML	A-4	0	0	100	95-100	90-100	70-90	15-30	NP-7
51A:												
Swansea---------	0-8	Muck	PT	A-8	---	---	---	---	---	---	---	---
	8-23	Muck, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	23-37	Loamy fine sand, sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	100	100	30-70	5-30	0-31	NP
	37-65	Gravelly sand, sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	55-100	45-100	30-70	5-25	0-31	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
52A:												
Freetown--------	0-9	Muck	PT	A-8	---	---	---	---	---	---	---	---
	9-65	Muck, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
53A:												
Freetown, ponded	0-9	Muck	PT	A-8	---	---	---	---	---	---	---	---
	9-65	Muck, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
71B:												
Ridgebury-------	0-7	Fine sandy loam	ML, SM	A-2, A-4	0	0	90-100	50-85	30-80	15-65	0-37	NP
	7-10	Fine sandy loam, gravelly loam	SM, ML, GM	A-1, A-2, A-4	0-5	0-10	65-100	55-90	40-80	20-60	0-22	NP
	10-65	Sandy loam, gravelly loam	ML, GM, SM	A-1, A-2, A-4	0	0-4	65-100	55-90	35-80	20-60	0-22	NP
73B:												
Whitman---------	0-10	Fine sandy loam	SM, CL-ML, ML	A-1, A-2, A-4	0	0	80-100	60-90	35-90	20-65	16-35	NP-10
	10-18	Sandy loam, gravelly fine sandy loam, gravelly silt loam	SM, ML, CL-ML	A-1, A-2, A-4	0	0	80-100	60-90	40-80	20-60	16-35	NP-10
	18-65	Gravelly sandy loam, gravelly loamy sand, loamy sand	SM	A-1, A-2	0	0-4	80-100	60-90	40-80	15-35	0-21	NP
97A:												
Suncook---------	0-6	Loamy sand	SM	A-2	0	0	100	100	50-90	15-35	0-27	NP
	6-65	Stratified coarse sand to sand	SM, SP	A-1, A-2, A-3	0	0	100	100	30-90	0-35	0-18	NP
98A:												
Winooski--------	0-6	Very fine sandy loam	ML, SM	A-4	0	0	100	95-100	90-100	40-90	15-30	NP
	6-65	Very fine sandy loam, silt loam, loamy very fine sand	SM, ML	A-4	0	0	100	95-100	90-100	40-90	15-30	NP
99A:												
Occum-----------	0-9	Very fine sandy loam	ML, SM	A-4	0	0	95-100	75-100	60-90	35-85	15-35	NP-6
	9-21	Very fine sandy loam, sandy loam, loam	ML, SM	A-2, A-4	0	0	95-100	75-100	45-85	25-70	15-25	NP-4
	21-26	Sand, fine sandy loam	SM	A-2, A-4	0	0	95-100	75-100	45-85	25-50	15-25	NP-3
	26-65	Stratified fine sand to gravelly loamy sand	SP-SM, SM, SP	A-1, A-2, A-3	0	0-10	65-100	30-100	15-75	0-25	0-22	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
103B:												
Charlton--------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
Hollis----------	0-2	Fine sandy loam	SM, ML, GM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	SM, ML, GM	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
103C:												
Charlton--------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
Hollis----------	0-2	Fine sandy loam	ML, SM, GM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	SM, ML, GM	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
103D:												
Charlton--------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
Hollis----------	0-2	Fine sandy loam	SM, ML, GM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	SM, ML, GM	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
104C:												
Hollis----------	0-2	Fine sandy loam	SM, ML, GM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	GM, SM, ML	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
Charlton--------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	SM, GM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
104D:												
Hollis----------	0-2	Fine sandy loam	GM, ML, SM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	GM, ML, SM	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
Charlton--------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	SM, GM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
105E:												
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
Hollis----------	0-2	Fine sandy loam	GM, ML, SM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	SM, GM, ML	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
106C:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	SP-SM, GM, SM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
106C:												
Hollis----------	0-2	Fine sandy loam	ML, GM, SM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	GM, ML, SM	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
106D:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	SP-SM, SM, GM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	SM, GM, SP-SM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP
Hollis----------	0-2	Fine sandy loam	GM, ML, SM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	SM, ML, GM	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
223A:												
Scio-----------	0-8	Very fine sandy loam	ML	A-4	0	0	100	95-100	90-100	70-90	15-20	NP-4
	8-35	Very fine sandy loam, silt loam	ML	A-4	0	0	100	95-100	90-100	70-90	15-20	NP-4
	35-65	Silt loam	SP, SM, GP-GM, ML	A-1, A-2, A-3, A-4	0	0	35-95	30-90	15-85	2-80	15-20	NP-4
223B:												
Scio-----------	0-8	Very fine sandy loam	ML	A-4	0	0	100	95-100	90-100	70-90	15-20	NP-4
	8-35	Very fine sandy loam, silt loam	ML	A-4	0	0	100	95-100	90-100	70-90	15-20	NP-4
	35-65	Silt loam	ML, GP-GM, SM, SP	A-1, A-2, A-3, A-4	0	0	35-95	30-90	15-85	2-80	15-20	NP-4

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
251A:												
Haven-----------	0-2	Silt loam	ML, SM	A-4	0	0	80-100	75-100	65-100	40-90	15-25	NP-4
	2-20	Silt loam, gravelly sandy loam	ML, SM	A-1, A-2, A-4	0	0	80-100	75-100	65-100	40-90	15-25	NP-4
	20-32	Very fine sandy loam, silt loam, gravelly sandy loam	SM, ML	A-1, A-2, A-4	0	0	60-100	55-95	40-95	20-85	15-25	NP-4
	32-65	Stratified coarse sand to sand to fine sand	SW, SP, SM, GP	A-1, A-2, A-3	0	0	60-100	55-95	10-60	1-25	0-10	NP
251B:												
Haven-----------	0-2	Silt loam	ML, SM	A-4	0	0	80-100	75-100	65-100	40-90	15-25	NP-4
	2-20	Silt loam, gravelly sandy loam	ML, SM	A-1, A-2, A-4	0	0	80-100	75-100	65-100	40-90	15-25	NP-4
	20-32	Very fine sandy loam, silt loam, gravelly sandy loam	SM, ML	A-1, A-2, A-4	0	0	60-100	55-95	40-95	20-85	15-25	NP-4
	32-65	Stratified coarse sand to sand to fine sand	SP, SW, GP, SM	A-1, A-2, A-3	0	0	60-100	55-95	10-60	1-25	0-10	NP
253A:												
Hinckley--------	0-7	Loamy sand	SP-SM, SM	A-1, A-2	0	0-10	85-95	75-90	35-75	10-35	15-20	NP
	7-17	Very gravelly loamy sand, loamy fine sand, very gravelly loamy coarse sand	SP-SM, SM, GP-GM, GM	A-1, A-2, A-3	0-6	0-20	50-95	30-85	15-70	2-30	15-20	NP
	17-65	Stratified extremely gravelly coarse sand to extremely gravelly sand	SP, SP-SM, GP-GM, GP	A-1	0-10	5-25	30-65	30-60	10-40	0-20	0-10	NP
253B:												
Hinckley--------	0-7	Loamy sand	SM, SP-SM	A-1, A-2	0	0-10	85-95	75-90	35-75	10-35	15-20	NP
	7-17	Very gravelly loamy sand, loamy fine sand, very gravelly loamy coarse sand	GM, GP-GM, SP-SM, SM	A-1, A-2, A-3	0-6	0-20	50-95	30-85	15-70	2-30	15-20	NP
	17-65	Stratified extremely gravelly coarse sand to extremely gravelly sand	GP, SP-SM, SP, GP-GM	A-1	0-10	5-25	30-65	30-60	10-40	0-20	0-10	NP
253C:												
Hinckley--------	0-7	Loamy sand	SP-SM, SM	A-1, A-2	0	0-10	85-95	75-90	35-75	10-35	15-20	NP
	7-17	Very gravelly loamy sand, loamy fine sand, very gravelly loamy coarse sand	GP-GM, SM, SP-SM, GM	A-1, A-2, A-3	0-6	0-20	50-95	30-85	15-70	2-30	15-20	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
253C:												
Hinckley	17-65	Stratified extremely gravelly coarse sand to extremely gravelly sand	SP-SM, SP, GP-GM, GP	A-1	0-10	5-25	30-65	30-60	10-40	0-20	0-10	NP
253D:												
Hinckley	0-7	Loamy sand	SM, SP-SM	A-1, A-2	0	0-10	85-95	75-90	35-75	10-35	15-20	NP
	7-17	Very gravelly loamy sand, loamy fine sand, very gravelly loamy coarse sand	GP-GM, SM, GM, SP-SM	A-1, A-2, A-3	0-6	0-20	50-95	30-85	15-70	2-30	15-20	NP
	17-65	Stratified extremely gravelly coarse sand to extremely gravelly sand	SP, SP-SM, GP, GP-GM	A-1	0-10	5-25	30-65	30-60	10-40	0-20	0-10	NP
253E:												
Hinckley	0-7	Loamy sand	SM, SP-SM	A-1, A-2	0	0-10	85-95	75-90	35-75	10-35	15-20	NP
	7-17	Very gravelly loamy sand, loamy fine sand, very gravelly loamy coarse sand	SP-SM, SM, GM, GP-GM	A-1, A-2, A-3	0-6	0-20	50-95	30-85	15-70	2-30	15-20	NP
	17-65	Stratified extremely gravelly coarse sand to extremely gravelly sand	GP, GP-GM, SP, SP-SM	A-1	0-10	5-25	30-65	30-60	10-40	0-20	0-10	NP
254A:												
Merrimac	0-9	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	70-90	40-85	20-55	15-20	NP
	9-18	Gravelly sandy loam	SM	A-2	0	0	75-95	70-90	40-60	20-35	15-25	NP
	18-26	Very gravelly loamy coarse sand, sandy loam, gravelly sandy loam	SM, SP, SP-SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	0-35	15-25	NP
	26-33	Stratified extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	0-10	30-65	30-60	15-40	0-10	0-18	NP
	33-65	Stratified gravelly coarse sand	GP, GP-GM, SP-SM, SP	A-1	0	0-10	30-65	30-60	15-40	0-10	0-18	NP
254B:												
Merrimac	0-9	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	70-90	40-85	20-55	15-20	NP
	9-18	Gravelly sandy loam	SM	A-2	0	0	75-95	70-90	40-60	20-35	15-25	NP
	18-26	Very gravelly loamy coarse sand, sandy loam, gravelly sandy loam	SM, SP, SP-SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	0-35	15-25	NP
	26-33	Stratified extremely gravelly coarse sand	SP, GP, SP-SM, GP-GM	A-1	0	0-10	30-65	30-60	15-40	0-10	0-18	NP
	33-65	Stratified gravelly coarse sand	GP, SP, SP-SM, GP-GM	A-1	0	0-10	30-65	30-60	15-40	0-10	0-18	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
254C:												
Merrimac--------	0-9	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	70-90	40-85	20-55	15-20	NP
	9-18	Gravelly sandy loam	SM	A-2	0	0	75-95	70-90	40-60	20-35	15-25	NP
	18-26	Very gravelly loamy coarse sand, sandy loam, gravelly sandy loam	SP, SP-SM, SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	0-35	15-25	NP
	26-33	Stratified extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1	0	0-10	30-65	30-60	15-40	0-10	0-18	NP
	33-65	Stratified gravelly coarse sand	GP-GM, SP, SP-SM, GP	A-1	0	0-10	40-65	30-60	15-40	0-10	0-18	NP
255A:												
Windsor---------	0-8	Loamy sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	20-35	0-25	NP
	8-16	Loamy sand, loamy fine sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	15-30	0-20	NP
	16-23	Sand, loamy fine sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	15-30	0-20	NP
	23-30	Gravelly sand, fine sand, loamy sand	SP, SP-SM, SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	2-30	0-14	NP
	30-65	Sand, fine sand, loamy sand	SP, SP-SM, SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	2-30	0-14	NP
255B:												
Windsor---------	0-8	Loamy sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	20-35	0-25	NP
	8-16	Loamy sand, loamy fine sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	15-30	0-20	NP
	16-23	Sand, loamy fine sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	15-30	0-20	NP
	23-30	Gravelly sand, fine sand, loamy sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	2-30	0-14	NP
	30-65	Sand, fine sand, loamy sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	2-30	0-14	NP
255C:												
Windsor---------	0-8	Loamy sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	20-35	0-25	NP
	8-16	Loamy sand, loamy fine sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	15-30	0-20	NP
	16-23	Sand, loamy fine sand	SM	A-1, A-2	0	0	95-100	80-100	45-90	15-30	0-20	NP
	23-30	Gravelly sand, fine sand, loamy sand	SP-SM, SP, SM	A-1, A-2, A-3	0	0	90-100	75-100	40-90	2-30	0-14	NP
	30-65	Sand, fine sand, loamy sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	90-100	75-100	40-90	2-30	0-14	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
256A:												
Deerfield-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-11	Loamy sand	SM, SP-SM	A-1, A-2, A-3, A-4	0	0	95-100	80-100	40-75	5-40	0-28	NP
	11-17	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	80-100	40-80	5-40	0-24	NP
	17-25	Sand, fine sand, coarse sand	SM, SP	A-1, A-2, A-3	0	0	95-100	65-100	30-75	3-30	0-20	NP
	25-65	Coarse sand, fine sand, sand	SP, SM	A-1, A-2, A-3	0	0	95-100	65-100	30-75	3-30	0-20	NP
256B:												
Deerfield-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	1-11	Loamy sand	SP-SM, SM	A-1, A-2, A-3, A-4	0	0	95-100	80-100	40-75	5-40	0-28	NP
	11-17	Loamy sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0	95-100	80-100	40-80	5-40	0-24	NP
	17-25	Sand, fine sand, coarse sand	SP, SM	A-1, A-2, A-3	0	0	95-100	65-100	30-75	3-30	0-20	NP
	25-65	Coarse sand, fine sand, sand	SP, SM	A-1, A-2, A-3	0	0	95-100	65-100	30-75	3-30	0-20	NP
259A:												
Carver----------	0-7	Loamy coarse sand	SM	A-2	0	0	85-100	75-100	50-65	10-30	0-24	NP
	7-13	Loamy coarse sand, loamy sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-100	50-65	10-30	0-22	NP
	13-21	Coarse sand, loamy sand, loamy coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	80-100	75-100	35-60	5-25	0-22	NP
	21-35	Gravelly coarse sand	SP, SP-SM	A-1	0	0	80-100	75-100	35-50	0-10	0-14	NP
	35-65	Coarse sand	SP, SP-SM	A-1	0	0	80-100	75-100	35-50	0-10	0-14	NP
259B:												
Carver----------	0-7	Loamy coarse sand	SM	A-2	0	0	85-100	75-100	50-65	10-30	0-24	NP
	7-13	Loamy coarse sand, loamy sand, coarse sand	SP-SM, SM	A-1, A-2, A-3	0	0	85-100	75-100	50-65	10-30	0-22	NP
	13-21	Coarse sand, loamy sand, loamy coarse sand	SP-SM, SM	A-1, A-2, A-3	0	0	80-100	75-100	35-60	5-25	0-22	NP
	21-35	Gravelly coarse sand	SP, SP-SM	A-1	0	0	80-100	75-100	35-50	0-10	0-14	NP
	35-65	Coarse sand	SP, SP-SM	A-1	0	0	80-100	75-100	35-50	0-10	0-14	NP
259C:												
Carver----------	0-7	Loamy coarse sand	SM	A-2	0	0	85-100	75-100	50-65	10-30	0-24	NP
	7-13	Loamy coarse sand, loamy sand, coarse sand	SM, SP-SM	A-1, A-2, A-3	0	0	85-100	75-100	50-65	10-30	0-22	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
259C:												
Carver----------	13-21	Coarse sand, loamy sand, loamy coarse sand	SP-SM, SM	A-1, A-2, A-3	0	0	80-100	75-100	35-60	5-25	0-22	NP
	21-35	Gravelly coarse sand	SP, SP-SM	A-1	0	0	80-100	75-100	35-50	0-10	0-14	NP
	35-65	Coarse sand	SP, SP-SM	A-1	0	0	80-100	75-100	35-50	0-10	0-14	NP
260B:												
Sudbury---------	0-8	Fine sandy loam	ML, SM	A-1, A-2, A-4	0	0	85-100	70-100	40-90	20-55	0-32	NP
	8-20	Fine sandy loam, sandy loam, gravelly sandy loam	SM	A-1, A-2, A-4	0	0	85-100	60-100	40-80	20-50	0-26	NP
	20-27	Loamy sand, gravelly coarse sand, sandy loam	SM, SP-SM	A-1, A-2, A-3	0	0-5	70-100	60-100	30-70	5-35	0-21	NP
	27-65	Stratified gravelly coarse sand to sand	GP, GP-GM, SP, SP-SM	A-1	0	4-23	35-70	25-65	15-45	0-10	26-65	NP
261A:												
Tisbury---------	0-8	Silt loam	ML	A-4	0	0	95-100	90-100	85-100	70-95	15-35	NP-7
	8-34	Very fine sandy loam, silt loam	ML	A-4	0	0	95-100	90-100	85-100	65-95	15-35	NP-5
	34-65	Very gravelly sand, gravelly loamy sand, sand	SP, SM, GP, GM	A-1, A-3	0	0-10	30-100	20-100	15-70	0-25	0-18	NP
261B:												
Tisbury---------	0-8	Silt loam	ML	A-4	0	0	95-100	90-100	85-100	70-95	15-35	NP-7
	8-34	Very fine sandy loam, silt loam	ML	A-4	0	0	95-100	90-100	85-100	65-95	15-35	NP-5
	34-65	Very gravelly sand, gravelly loamy sand, sand	GM, GP, SM, SP	A-1, A-3	0	0-10	30-100	20-100	15-70	0-25	0-18	NP
262B:												
Quonset---------	0-7	Sandy loam	ML, SM, SP-SM	A-2, A-4	0	0	75-100	70-100	50-85	10-55	0-35	NP
	7-18	Channery loamy sand, gravelly loamy sand, loamy sand	SP-SM, SM, GP-GM, GM	A-1	0	0-10	45-75	40-75	20-50	5-20	0-21	NP
	18-28	Very channery loamy sand, gravelly loamy sand, loamy sand	GM, GP-GM, SM, SP-SM	A-1	0	0-10	45-75	35-75	20-50	5-20	0-21	NP
	28-65	Stratified very channery coarse sand to very channery sand	GP-GM, SP, GP, SP-SM	A-1	0-5	0-5	20-70	10-60	5-45	0-10	0-14	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
262C:												
Quonset---------	0-7	Sandy loam	SP-SM, ML, SM	A-2, A-4	0	0	75-100	70-100	50-85	10-55	0-35	NP
	7-18	Channery loamy sand, gravelly loamy sand, loamy sand	SP-SM, GM, GP-GM, SM	A-1	0	0-10	45-75	40-75	20-50	5-20	0-21	NP
	18-28	Very channery loamy sand, gravelly loamy sand, loamy sand	GM, GP-GM, SM, SP-SM	A-1	0	0-10	45-75	35-75	20-50	5-20	0-21	NP
	28-65	Stratified very channery coarse sand to very channery sand	GP-GM, SP-SM, SP, GP	A-1	0-5	0-5	20-70	10-60	5-45	0-10	0-14	NP
262D:												
Quonset---------	0-7	Sandy loam	SP-SM, ML, SM	A-2, A-4	0	0	75-100	70-100	50-85	10-55	0-35	NP
	7-18	Channery loamy sand, gravelly loamy sand, loamy sand	GP-GM, SM, GM, SP-SM	A-1	0	0-10	45-75	40-75	20-50	5-20	0-21	NP
	18-28	Very channery loamy sand, gravelly loamy sand, loamy sand	SP-SM, SM, GP-GM, GM	A-1	0	0-10	45-75	35-75	20-50	5-20	0-21	NP
	28-65	Stratified very channery coarse sand to very channery sand	GP, GP-GM, SP, SP-SM	A-1	0-5	0-5	20-70	10-60	5-45	0-10	0-14	NP
262E:												
Quonset---------	0-7	Sandy loam	SP-SM, ML, SM	A-2, A-4	0	0	75-100	70-100	50-85	10-55	0-35	NP
	7-18	Channery loamy sand, gravelly loamy sand, loamy sand	SM, SP-SM, GP-GM, GM	A-1	0	0-10	45-75	40-75	20-50	5-20	0-21	NP
	18-28	Very channery loamy sand, gravelly loamy sand, loamy sand	GP-GM, SM, SP-SM, GM	A-1	0	0-10	45-75	35-75	20-50	5-20	0-21	NP
	28-65	Stratified very channery coarse sand to very channery sand	SP-SM, SP, GP, GP-GM	A-1	0-5	0-5	20-70	10-60	5-45	0-10	0-14	NP
300B:												
Montauk---------	0-7	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	80-100	75-100	45-95	20-85	15-20	NP-4
	7-20	Gravelly sandy loam, fine sandy loam, silt loam	CL-ML, SM, SC-SM, ML	A-4, A-1, A-2	0	0-10	60-100	55-95	35-90	15-80	15-20	NP-4
	20-29	Sandy loam, fine sandy loam, silt loam	SM, CL-ML, SC-SM, ML	A-4, A-1, A-2	0	0	60-100	55-95	35-90	15-80	15-20	NP-4
	29-65	Gravelly loamy sand, sandy loam, gravelly sandy loam	SP-SM, SM, GP-GM, GM	A-1, A-2, A-4	0	0-10	60-100	55-95	20-80	10-50	15-15	NP-2

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
300C:												
Montauk---------	0-7	Fine sandy loam	SM, SC-SM	A-2, A-4	0	0	80-100	75-100	45-95	20-85	15-20	NP-4
	7-20	Gravelly sandy loam, fine sandy loam, silt loam	SM, SC-SM, ML, CL-ML	A-4, A-1, A-2	0	0-10	60-100	55-95	35-90	15-80	15-20	NP-4
	20-29	Sandy loam, fine sandy loam, silt loam	SM, SC-SM, CL-ML, ML	A-4, A-1, A-2	0	0	60-100	55-95	35-90	15-80	15-20	NP-4
	29-65	Gravelly loamy sand, sandy loam, gravelly sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-4	0	0-10	60-100	55-95	20-80	10-50	15-15	NP-2
300D:												
Montauk---------	0-7	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	80-100	75-100	45-95	20-85	15-20	NP-4
	7-20	Gravelly sandy loam, fine sandy loam, silt loam	SM, SC-SM, ML, CL-ML	A-4, A-1, A-2	0	0-10	60-100	55-95	35-90	15-80	15-20	NP-4
	20-29	Sandy loam, fine sandy loam, silt loam	CL-ML, SM, SC-SM, ML	A-4, A-1, A-2	0	0	60-100	55-95	35-90	15-80	15-20	NP-4
	29-65	Gravelly loamy sand, sandy loam, gravelly sandy loam	SP-SM, SM, GP-GM, GM	A-1, A-2, A-4	0	0-10	60-100	55-95	20-80	10-50	15-15	NP-2
302B:												
Montauk---------	0-7	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	80-100	75-100	45-95	20-85	15-20	NP-4
	7-20	Gravelly sandy loam, fine sandy loam, silt loam	SM, SC-SM, ML, CL-ML	A-4, A-1, A-2	0	0-10	60-100	55-95	35-90	15-80	15-20	NP-4
	20-29	Sandy loam, fine sandy loam, silt loam	SM, SC-SM, ML, CL-ML	A-4, A-1, A-2	0	0	60-100	55-95	35-90	15-80	15-20	NP-4
	29-65	Gravelly loamy sand, sandy loam, gravelly sandy loam	SP-SM, SM, GP-GM, GM	A-1, A-2, A-4	0	0-10	60-100	55-95	20-80	10-50	15-15	NP-2
302C:												
Montauk---------	0-7	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	80-100	75-100	45-95	20-85	15-20	NP-4
	7-20	Gravelly sandy loam, fine sandy loam, silt loam	CL-ML, ML, SC-SM, SM	A-4, A-1, A-2	0	0-10	60-100	55-95	35-90	15-80	15-20	NP-4
	20-29	Sandy loam, fine sandy loam, silt loam	SC-SM, CL-ML, ML, SM	A-4, A-1, A-2	0	0	60-100	55-95	35-90	15-80	15-20	NP-4
	29-65	Gravelly loamy sand, sandy loam, gravelly sandy loam	SP-SM, SM, GP-GM, GM	A-1, A-2, A-4	0	0-10	60-100	55-95	20-80	10-50	15-15	NP-2

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
302D:												
Montauk	0-7	Fine sandy loam	SC-SM, SM	A-2, A-4	0	0	80-100	75-100	45-95	20-85	15-20	NP-4
	7-20	Gravelly sandy loam, fine sandy loam, silt loam	CL-ML, ML, SC-SM, SM	A-4, A-1, A-2	0	0-10	60-100	55-95	35-90	15-80	15-20	NP-4
	20-29	Sandy loam, fine sandy loam, silt loam	SC-SM, CL-ML, ML, SM	A-4, A-1, A-2	0	0	60-100	55-95	35-90	15-80	15-20	NP-4
	29-65	Gravelly loamy sand, sandy loam, gravelly sandy loam	GM, GP-GM, SM, SP-SM	A-1, A-2, A-4	0	0-10	60-100	55-95	20-80	10-50	15-15	NP-2
305B:												
Paxton	0-7	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	GM, SM, ML	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	ML, SM, GM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7
305C:												
Paxton	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7
305D:												
Paxton	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
305E:												
Paxton----------	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	SM, GM, ML	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	ML, GM, SM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7
307B:												
Paxton----------	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	ML, GM, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	SM, GM, ML	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7
307C:												
Paxton----------	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	ML, SM, GM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7
307D:												
Paxton----------	0-7	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	GM, SM, ML	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	ML, GM, SM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
307E:												
Paxton----------	0-7	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7
310A:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	SM, ML	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10
	4-30	Fine sandy loam, loam, gravelly fine sandy loam	SM, GM, ML	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	SM, ML, GM	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7
310B:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	SM, ML	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10
	4-30	Fine sandy loam, loam, gravelly fine sandy loam	GM, SM, ML	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	SM, ML, GM	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7
310C:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	SM, ML	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10
	4-30	Fine sandy loam, loam, gravelly fine sandy loam	SM, ML, GM	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	GM, ML, SM	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
311B:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	ML, SM	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10
	4-30	Fine sandy loam, loam, gravelly fine sandy loam	GM, SM, ML	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	SM, GM, ML	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7
311C:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	ML, SM	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10
	4-30	Fine sandy loam, loam, gravelly fine sandy loam	GM, ML, SM	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	GM, SM, ML	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7
312B:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	ML, SM	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10
	4-30	Fine sandy loam, loam, gravelly fine sandy loam	GM, ML, SM	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	SM, ML, GM	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7
312C:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	SM, ML	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10
	4-30	Fine sandy loam, loam, gravelly fine sandy loam	ML, SM, GM	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	SM, GM, ML	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
315B:												
Scituate--------	0-8	Fine sandy loam	SM, ML	A-1, A-2, A-4	0	0	80-95	70-90	40-85	20-65	15-20	NP-4
	8-20	Sandy loam, fine sandy loam, loam	SM, ML	A-1, A-2, A-4	0	0	70-95	60-90	35-85	20-65	15-20	NP-4
	20-27	Loamy fine sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2
	27-65	Gravelly loamy sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2
315C:												
Scituate--------	0-8	Fine sandy loam	ML, SM	A-1, A-2, A-4	0	0	80-95	70-90	40-85	20-65	15-20	NP-4
	8-20	Sandy loam, fine sandy loam, loam	ML, SM	A-1, A-2, A-4	0	0	70-95	60-90	35-85	20-65	15-20	NP-4
	20-27	Loamy fine sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2
	27-65	Gravelly loamy sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2
317B:												
Scituate--------	0-8	Fine sandy loam	ML, SM	A-1, A-2, A-4	0	0	80-95	70-90	40-85	20-65	15-20	NP-4
	8-20	Sandy loam, fine sandy loam, loam	ML, SM	A-1, A-2, A-4	0	0	70-95	60-90	35-85	20-65	15-20	NP-4
	20-27	Loamy fine sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2
	27-65	Gravelly loamy sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2
317C:												
Scituate--------	0-8	Fine sandy loam	ML, SM	A-1, A-2, A-4	0	0	80-95	70-90	40-85	20-65	15-20	NP-4
	8-20	Sandy loam, fine sandy loam, loam	ML, SM	A-1, A-2, A-4	0	0	70-95	60-90	35-85	20-65	15-20	NP-4
	20-27	Loamy fine sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
317C:												
Scituate	27-65	Gravelly loamy sand, gravelly loamy fine sand, gravelly loamy coarse sand	SM	A-1, A-2	0	0	65-85	50-75	30-65	12-30	15-15	NP-2
320B:												
Birchwood	0-5	Fine sandy loam	SM	A-2, A-4	0-10	0	90-100	85-100	70-95	25-50	0-29	NP
	5-25	Loamy fine sand, loamy sand, gravelly loamy sand	SP-SM, SM	A-1, A-2	0	0-10	85-100	70-100	40-85	10-30	0-23	NP
	25-38	Loamy sand, loamy fine sand, gravelly loamy sand	SM, SP-SM	A-1, A-2	0	0	85-100	70-100	40-85	10-30	0-23	NP
	38-65	Gravelly fine sandy loam, gravelly loam, silt loam	SM, ML, GM	A-2, A-4	0-10	0-10	65-90	60-85	45-80	20-65	15-25	NP-5
325D:												
Newport	0-8	Channery fine sandy loam	GM, ML, SM	A-2, A-4	0	0	65-85	60-75	45-70	30-60	15-35	NP-10
	8-18	Channery silt loam, channery loam, very fine sandy loam	SM, ML, GM	A-2, A-4	0-10	0-10	65-95	60-90	45-85	30-75	15-30	NP-7
	18-24	Channery sandy loam, channery loam, fine sandy loam	GM, ML, SM	A-2, A-4	0-10	0-10	60-90	55-85	45-80	25-70	15-25	NP-4
	24-65	Channery fine sandy loam, channery silt loam, channery loam	ML, GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	45-80	25-70	15-25	NP-4
330B:												
Bernardston	0-3	Very fine sandy loam	CL-ML, ML	A-4, A-6, A-7	0	0	80-100	70-95	65-95	50-85	24-45	4-14
	3-21	Channery silt loam, loam	SM, SC-SM, CL-ML, ML	A-2, A-4	0	0	65-95	50-90	45-90	30-80	22-35	2-10
	21-65	Channery silt loam, loam, channery loam	SM, CL-ML, ML, SC-SM	A-2, A-4	0	0	65-90	50-85	45-85	30-75	20-32	2-8
330C:												
Bernardston	0-3	Very fine sandy loam	ML, CL-ML	A-4, A-6, A-7	0	0	80-100	70-95	65-95	50-85	24-45	4-14
	3-21	Channery silt loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	65-95	50-90	45-90	30-80	22-35	2-10
	21-65	Channery silt loam, loam, channery loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	65-90	50-85	45-85	30-75	20-32	2-8

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
330D:												
Bernardston-----	0-3	Very fine sandy loam	ML, CL-ML	A-4, A-6, A-7	0	0	80-100	70-95	65-95	50-85	24-45	4-14
	3-21	Channery silt loam, loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0	65-95	50-90	45-90	30-80	22-35	2-10
	21-65	Channery silt loam, loam, channery loam	SM, ML, CL-ML, SC-SM	A-2, A-4	0	0	65-90	50-85	45-85	30-75	20-32	2-8
330E:												
Bernardston-----	0-3	Very fine sandy loam	CL-ML, ML	A-4, A-6, A-7	0	0	80-100	70-95	65-95	50-85	24-45	4-14
	3-21	Channery silt loam, loam	SC-SM, SM, CL-ML, ML	A-2, A-4	0	0	65-95	50-90	45-90	30-80	22-35	2-10
	21-65	Channery silt loam, loam, channery loam	CL-ML, SM, ML, SC-SM	A-2, A-4	0	0	65-90	50-85	45-85	30-75	20-32	2-8
335B:												
Rainbow---------	0-8	Silt loam	ML	A-4	0	0	85-100	75-100	65-95	55-80	15-35	NP-10
	8-22	Silt loam, very fine sandy loam, gravelly loam	ML, SM	A-4	0	0	75-100	65-100	55-90	45-80	15-30	NP-4
	22-32	Very fine sandy loam, silt loam, gravelly loam	SM, ML	A-4	0	0	75-100	65-100	55-90	45-80	15-30	NP-4
	32-65	Gravelly sandy loam, gravelly fine sandy loam, loam	GM, ML, SM	A-1, A-2, A-4	0	0-20	65-95	55-90	40-80	20-60	15-25	NP-6
336B:												
Rainbow---------	0-8	Silt loam	ML	A-4	0	0	85-100	75-100	65-95	55-80	15-35	NP-10
	8-22	Silt loam, very fine sandy loam, gravelly loam	ML, SM	A-4	0	0	75-100	65-100	55-90	45-80	15-30	NP-4
	22-32	Very fine sandy loam, silt loam, gravelly loam	ML, SM	A-4	0	0	75-100	65-100	55-90	45-80	15-30	NP-4
	32-65	Gravelly sandy loam, gravelly fine sandy loam, loam	SM, ML, GM	A-1, A-2, A-4	0	0-20	65-95	55-90	40-80	20-60	15-25	NP-6
340B:												
Broadbrook------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-10	Very fine sandy loam	ML	A-4	0-6	0	90-100	75-100	65-95	55-80	15-35	NP-10
	10-20	Gravelly very fine sandy loam, silt loam, gravelly loam	SM, ML	A-4	0	0-10	75-100	65-100	55-90	45-80	15-20	NP-6

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
340B:												
Broadbrook------	20-65	Gravelly fine sandy loam, sandy loam, gravelly sandy loam	SM, ML, GM	A-1, A-2, A-4	0-6	0	65-90	55-90	40-70	20-55	15-25	NP-4
340D:												
Broadbrook------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-10	Very fine sandy loam	ML	A-4	0-6	0	90-100	75-100	65-95	55-80	15-35	NP-10
	10-20	Gravelly very fine sandy loam, silt loam, gravelly loam	ML, SM	A-4	0	0-10	75-100	65-100	55-90	45-80	15-20	NP-6
	20-65	Gravelly fine sandy loam, sandy loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0-6	0	65-90	55-90	40-70	20-55	15-25	NP-4
341B:												
Broadbrook------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-10	Very fine sandy loam	ML	A-4	0-6	0	90-100	75-100	65-95	55-80	15-35	NP-10
	10-20	Gravelly very fine sandy loam, silt loam, gravelly loam	ML, SM	A-4	0	0-10	75-100	65-100	55-90	45-80	15-20	NP-6
	20-65	Gravelly fine sandy loam, sandy loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0-6	0	65-90	55-90	40-70	20-55	15-25	NP-4
341C:												
Broadbrook------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-10	Very fine sandy loam	ML	A-4	0-6	0	90-100	75-100	65-95	55-80	15-35	NP-10
	10-20	Gravelly very fine sandy loam, silt loam, gravelly loam	SM, ML	A-4	0	0-10	75-100	65-100	55-90	45-80	15-20	NP-6
	20-65	Gravelly fine sandy loam, sandy loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0-6	0	65-90	55-90	40-70	20-55	15-25	NP-4
341D:												
Broadbrook------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-10	Very fine sandy loam	ML	A-4	0-6	0	90-100	75-100	65-95	55-80	15-35	NP-10
	10-20	Gravelly very fine sandy loam, silt loam, gravelly loam	SM, ML	A-4	0	0-10	75-100	65-100	55-90	45-80	15-20	NP-6
	20-65	Gravelly fine sandy loam, sandy loam, gravelly sandy loam	SM, GM, ML	A-1, A-2, A-4	0-6	0	65-90	55-90	40-70	20-55	15-25	NP-4

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
345A:												
Pittstown-------	0-2	Silt loam	CL-ML, ML	A-4, A-6, A-7	0	0	80-100	70-95	65-95	50-85	25-45	4-15
	2-17	Silt loam, channery loam, very fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	65-95	60-90	50-90	30-80	20-35	2-10
	17-65	Channery silt loam, channery loam, very fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0-4	60-95	55-85	45-85	30-75	20-30	2-10
345B:												
Pittstown-------	0-2	Silt loam	ML, CL-ML	A-4, A-6, A-7	0	0	80-100	70-95	65-95	50-85	25-45	4-15
	2-17	Silt loam, channery loam, very fine sandy loam	SM, SC-SM, ML, CL-ML	A-2, A-4	0	0	65-95	60-90	50-90	30-80	20-35	2-10
	17-65	Channery silt loam, channery loam, very fine sandy loam	SC-SM, SM, ML, CL-ML	A-2, A-4	0	0-4	60-95	55-85	45-85	30-75	20-30	2-10
405B:												
Charlton--------	0-5	Fine sandy loam	ML, SM	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	SM, GM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
405C:												
Charlton--------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
407B:												
Charlton--------	0-5	Fine sandy loam	ML, SM	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
407C:												
Charlton--------	0-5	Fine sandy loam	ML, SM	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
407C:												
Charlton--------	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
407D:												
Charlton--------	0-5	Fine sandy loam	ML, SM	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
415B:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SP-SM, SM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP
415C:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	SP-SM, GM, SM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	SM, GM, SP-SM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
415D:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP
416B:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP
416C:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	GM, SM, SP-SM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
416D:												
Narragansett----	0-2	Slightly decomposed plant material	PT	A-8	0	0	---	---	---	---	---	---
	2-7	Silt loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-6
	7-35	Silt loam, very fine sandy loam, gravelly loam	ML	A-4	0	0	90-100	75-100	70-95	50-85	15-35	NP-4
	35-60	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	SM, GM, SP-SM	A-1, A-2, A-3	0-15	0-10	50-90	40-85	30-60	5-30	0-14	NP
	60-65	Very gravelly loamy sand, very gravelly loamy coarse sand, gravelly sand	SM, SP-SM, GM	A-1, A-2, A-3	0	0-10	50-90	40-85	30-60	5-30	0-14	NP
420B:												
Canton----------	0-8	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SP-SM, SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
420C:												
Canton----------	0-8	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
420D:												
Canton----------	0-8	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SP-SM, SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
422B:												
Canton----------	0-8	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
422C:												
Canton----------	0-8	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
422D:												
Canton----------	0-8	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
424B:												
Canton----------	0-8	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
424C:												
Canton----------	0-8	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
424D:												
Canton----------	0-8	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	ML, SM	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SM, SP-SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
600:												
Pits, gravel----	---	---	---	---	---	---	---	---	---	---	---	---
601:												
Pits, quarry----	---	---	---	---	---	---	---	---	---	---	---	---
602:												
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
603:												
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
621B:												
Scio------------	0-8	Very fine sandy loam	ML	A-4	0	0	100	95-100	90-100	70-90	15-20	NP-4
	8-35	Very fine sandy loam, silt loam	ML	A-4	0	0	100	95-100	90-100	70-90	15-20	NP-4
	35-65	Silt loam	SP, GP-GM, ML, SM	A-1, A-2, A-3, A-4	0	0	35-95	30-90	15-85	2-80	15-20	NP-4
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
622C:												
Paxton----------	0-7	Fine sandy loam	ML, SM	A-2, A-4	0	0	85-95	75-90	50-80	20-65	15-40	NP-10
	7-13	Fine sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	13-22	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-2, A-4	0	0	65-95	60-90	45-80	25-65	15-30	NP-7
	22-26	Sandy loam, loam, gravelly sandy loam	GM, ML, SM	A-1, A-2, A-4	0	0	65-95	60-90	40-75	20-60	15-30	NP-7
	26-65	Fine sandy loam, loam, gravelly sandy loam	ML, GM, SM	A-1, A-2, A-4	0	0-4	65-95	60-90	40-75	20-60	15-30	NP-7
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
623C:												
Woodbridge------	0-2	Moderately decomposed plant material	PT	A-8	0	---	---	---	---	---	---	---
	2-4	Fine sandy loam	ML, SM	A-2, A-4	0	0-5	85-95	75-90	50-80	25-65	15-40	NP-10

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
623C:												
Woodbridge------	4-30	Fine sandy loam, loam, gravelly fine sandy loam	GM, ML, SM	A-2, A-4	0-10	0-4	65-95	60-90	45-80	25-65	15-30	NP-7
	30-65	Fine sandy loam, loam, gravelly fine sandy loam	SM, ML, GM	A-1, A-2, A-4	0-10	0	65-95	60-90	40-75	20-60	15-30	NP-7
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
624B:												
Haven-----------	0-2	Silt loam	ML, SM	A-4	0	0	80-100	75-100	65-100	40-90	15-25	NP-4
	2-20	Silt loam, gravelly sandy loam	ML, SM	A-1, A-2, A-4	0	0	80-100	75-100	65-100	40-90	15-25	NP-4
	20-32	Very fine sandy loam, silt loam, gravelly sandy loam	SM, ML	A-1, A-2, A-4	0	0	60-100	55-95	40-95	20-85	15-25	NP-4
	32-65	Stratified coarse sand to sand to fine sand	SP, SM, GP, SW	A-1, A-2, A-3	0	0	60-100	55-95	10-60	1-25	0-10	NP
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
626B:												
Merrimac--------	0-9	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	70-90	40-85	20-55	15-20	NP
	9-18	Gravelly sandy loam	SM	A-2	0	0	75-95	70-90	40-60	20-35	15-25	NP
	18-26	Very gravelly loamy coarse sand, sandy loam, gravelly sandy loam	SP-SM, SP, SM	A-1, A-2, A-3	0	0	65-95	55-90	30-60	0-35	15-25	NP
	26-33	Stratified extremely gravelly coarse sand	SP-SM, SP, GP-GM, GP	A-1	0	0-10	30-65	30-60	15-40	0-10	0-18	NP
	33-65	Stratified gravelly coarse sand	SP-SM, GP-GM, GP, SP	A-1	0	0-10	40-65	30-60	15-40	0-10	0-18	NP
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
627C:												
Newport---------	0-8	Channery fine sandy loam	SM, ML, GM	A-2, A-4	0	0	65-85	60-75	45-70	30-60	15-35	NP-10
	8-18	Channery silt loam, channery loam, very fine sandy loam	GM, SM, ML	A-2, A-4	0-10	0-10	65-95	60-90	45-85	30-75	15-30	NP-7
	18-24	Channery sandy loam, channery loam, fine sandy loam	GM, SM, ML	A-2, A-4	0-10	0-10	60-90	55-85	45-80	25-70	15-25	NP-4

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
627C:												
Newport---------	24-65	Channery fine sandy loam, channery silt loam, channery loam	ML, GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	45-80	25-70	15-25	NP-4
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
629C:												
Canton----------	0-8	Fine sandy loam	SM, ML	A-2, A-4	0	0	85-95	75-90	55-85	30-60	15-18	NP-8
	8-21	Fine sandy loam, very fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0	0	80-95	70-90	50-85	30-60	0-12	NP-8
	21-65	Gravelly loamy sand, gravelly loamy coarse sand	SP-SM, SM	A-1, A-2	0	0-10	65-85	50-80	20-60	10-30	0-22	NP
Charlton--------	0-5	Fine sandy loam	ML, SM	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
631C:												
Charlton--------	0-5	Fine sandy loam	SM, ML	A-2, A-4	0	0	75-95	70-90	60-85	30-70	15-25	NP-5
	5-22	Sandy loam, gravelly fine sandy loam, gravelly loam	SM, ML	A-2, A-4	0-10	0-6	75-95	60-90	50-80	20-65	15-25	NP-3
	22-65	Gravelly sandy loam, fine sandy loam	GM, SM	A-2, A-4	0-10	0-10	60-90	55-85	40-75	20-45	0-22	NP
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
Hollis----------	0-2	Fine sandy loam	ML, GM, SM	A-2, A-4	0-10	0	80-100	60-95	40-85	20-50	15-25	NP-5
	2-14	Fine sandy loam	SM, ML, GM	A-2, A-4	0	0	80-100	60-95	40-85	20-50	15-25	NP-5
	14-18	Unweathered bedrock			---	---	---	---	---	---	---	---
652:												
Udorthents, refuse substratum-----	---	---	---	---	---	---	---	---	---	---	---	---
653:												
Udorthents, sandy----------	---	---	---	---	---	---	---	---	---	---	---	---

Table 14.—Engineering Properties—continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
654:												
Udorthents, loamy	---	---	---	---	---	---	---	---	---	---	---	---
655:												
Udorthents, wet substratum	---	---	---	---	---	---	---	---	---	---	---	---
656:												
Udorthents	---	---	---	---	---	---	---	---	---	---	---	---
Urban land	---	---	---	---	---	---	---	---	---	---	---	---

Table 15.—Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
1:													
Water----------------	---	---	---	---	---	---	---	---	---	---	--	---	---
2A:													
Pootatuck------------	0-7	2-6	1.10-1.35	0.6-6	4.23-42.34	0.11-0.21	0.0-2.9	2.0-6.0	.20	.20	5	3	86
	7-15	1-6	1.20-1.45	0.6-6	4.23-42.34	0.09-0.18	0.0-2.9	1.0-3.0	.20	.24			
	15-23	1-6	1.20-1.45	0.6-6	4.23-42.34	0.09-0.18	0.0-2.9	1.0-3.0	.20	.24			
	23-29	0-2	1.25-1.50	6-20	42.34-141.14	0.01-0.10	0.0-2.9	1.0-3.0	.17	.28			
	29-65	0-2	1.25-1.50	6-20	42.34-141.14	0.01-0.10	0.0-2.9	1.0-3.0	.17	.28			
4A:													
Rippowam-------------	0-7	2-6	1.10-1.35	0.6-6	4.23-42.34	0.11-0.21	0.0-2.9	3.0-8.0	.20	.20	5	8	0
	7-18	1-6	1.20-1.45	0.6-6	4.23-42.34	0.09-0.18	0.0-2.9	2.0-6.0	.20	.24			
	18-40	1-6	1.20-1.45	0.6-6	4.23-42.34	0.09-0.18	0.0-2.9	2.0-6.0	.20	.24			
	40-65	0-2	1.25-1.50	6-20	42.34-141.14	0.01-0.10	0.0-2.9	1.0-5.0	.17	.28			
6A:													
Scarboro-------------	0-3	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	5	8	0
	3-11	1-7	0.70-1.00	6-20	42.34-141.14	0.10-0.23	0.0-2.9	4.0-8.0	.17	.17			
	11-21	1-5	1.15-1.35	6-20	42.34-141.14	0.04-0.13	0.0-2.9	2.0-6.0	.17	.20			
	21-29	0-2	1.35-1.55	6-20	42.34-141.14	0.02-0.13	0.0-2.9	1.0-3.0	.10	.10			
	29-65	0-2	1.35-1.55	6-20	42.34-141.14	0.01-0.13	0.0-2.9	0.0-2.0	.10	.17			
8A:													
Limerick-------------	0-3	4-10	1.10-1.50	0.6-2	4.23-14.11	0.18-0.30	0.0-2.9	2.0-5.0	.49	.49	5	8	0
	3-40	2-10	1.10-1.50	0.6-2	4.23-14.11	0.18-0.26	0.0-2.9	2.0-4.0	.49	.49			
	40-65	1-8	1.20-1.50	0.6-2	4.23-14.11	0.18-0.25	0.0-2.9	1.0-3.0	.49	.49			
30B:													
Raynham--------------	0-8	3-16	1.20-1.50	0.2-2	1.41-14.11	0.18-0.24	0.0-2.9	3.0-10	.49	.49	3	8	0
	8-33	3-16	1.20-1.50	0.2-2	1.41-14.11	0.18-0.22	0.0-2.9	1.0-3.0	.64	.64			
	33-65	3-12	1.20-1.60	0.06-0.2	0.42-1.41	0.17-0.21	0.0-2.9	0.0-2.0	.64	.64			
32B:													
Wareham--------------	0-10	1-3	1.00-1.20	6-20	42.34-141.14	0.06-0.15	0.0-2.9	2.0-5.0	.17	.20	5	8	0
	10-24	0-3	1.30-1.50	6-20	42.34-141.14	0.03-0.13	0.0-2.9	0.0-2.0	.17	.20			
	24-34	0-3	1.40-1.60	6-20	42.34-141.14	0.01-0.13	0.0-2.9	0.0-1.0	.17	.20			
	34-65	0-2	1.40-1.60	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-1.0	.10	.20			
33B:													
Raypol---------------	0-9	3-12	1.00-1.25	0.6-2	4.23-14.11	0.16-0.28	0.0-2.9	2.0-8.0	.49	.49	3	8	0
	9-19	3-12	1.35-1.55	0.6-2	4.23-14.11	0.15-0.26	0.0-2.9	2.0-6.0	.49	.55			
	19-48	0-2	1.40-1.65	6-20	42.34-141.14	0.01-0.10	0.0-2.9	1.0-3.0	.10	.20			
	48-65	0-2	1.40-1.65	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-1.0	.10	.20			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
36A:													
Saco-----------------	0-13	4-15	0.80-1.20	0.6-2	4.23-14.11	0.24-0.34	0.0-2.9	10-20	.49	.49	5	8	0
	13-30	2-15	1.20-1.50	0.6-2	4.23-14.11	0.16-0.26	0.0-2.9	8.0-12	.64	.64			
	30-45	2-15	1.20-1.50	0.6-2	4.23-14.11	0.16-0.26	0.0-2.9	4.0-8.0	.64	.64			
	45-65	1-8	1.30-1.60	6-20	42.34-141.14	0.01-0.13	0.0-2.9	2.0-6.0	.10	.15			
44A:													
Birdsall-------------	0-15	3-16	1.00-1.10	0.2-2	1.41-14.11	0.17-0.30	0.0-2.9	2.0-8.0	.49	.49	5	8	0
	15-30	3-16	1.20-1.50	0.2-0.6	1.41-4.23	0.15-0.26	0.0-2.9	1.0-3.0	.64	.64			
	30-65	3-16	1.20-1.50	0.06-0.2	0.42-1.41	0.15-0.26	0.0-2.9	0.0-1.0	.64	.64			
51A:													
Swansea--------------	0-8	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	8-23	---	0.15-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---			
	23-37	1-5	1.15-1.40	20-100	141.14-705.00	0.01-0.08	0.0-2.9	2.0-6.0	.10	.15			
	37-65	1-2	1.15-1.40	20-100	141.14-705.00	0.01-0.08	0.0-2.9	2.0-4.0	.10	.15			
52A:													
Freetown-------------	0-9	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	5	8	0
	9-65	---	0.15-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---			
53A:													
Freetown, ponded-----	0-9	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	5	8	0
	9-65	---	0.15-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---			
71B:													
Ridgebury------------	0-7	3-10	1.00-1.30	0.6-6	4.23-42.34	0.06-0.21	0.0-2.9	4.0-7.0	.20	.55	3	8	0
	7-10	2-8	1.60-1.90	0.6-6	4.23-42.34	0.04-0.20	0.0-2.9	0.0-1.0	.32	.55			
	10-65	2-8	1.80-2.00	0.01-0.2	0.09-1.41	0.01-0.05	0.0-2.9	0.0-1.0	.24	.43			
73B:													
Whitman--------------	0-10	5-8	1.10-1.30	0.6-6	4.23-42.34	0.12-0.24	0.0-2.9	4.0-8.0	.20	.49	3	8	0
	10-18	2-4	1.60-1.85	0.6-6	4.23-42.34	0.10-0.17	0.0-2.9	1.0-3.0	.32	.49			
	18-65	1-6	1.90-2.10	0.01-0.2	0.09-1.41	0.02-0.03	0.0-2.9	0.0-1.0	.24	.37			
97A:													
Suncook--------------	0-6	1-3	1.10-1.30	6-20	42.34-141.14	0.07-0.12	0.0-2.9	2.0-5.0	.17	.17	5	2	134
	6-65	0-3	1.20-1.50	6-20	42.34-141.14	0.03-0.10	0.0-2.9	0.0-1.0	.17	.20			
98A:													
Winooski-------------	0-6	5-18	1.15-1.35	0.6-6	4.23-42.34	0.15-0.23	0.0-2.9	2.0-5.0	.49	.49	5	3	86
	6-65	5-18	1.20-1.50	0.6-6	4.23-42.34	0.13-0.21	0.0-2.9	2.0-4.0	.49	.49			
99A:													
Occum----------------	0-9	2-18	1.10-1.50	0.6-6	4.23-42.34	0.14-0.22	0.0-2.9	2.0-6.0	.32	.37	5	3	86
	9-21	2-12	1.20-1.50	0.6-6	4.23-42.34	0.10-0.20	0.0-2.9	2.0-6.0	.20	.24			
	21-26	0-5	1.20-1.50	6-20	42.34-141.14	0.10-0.18	0.0-2.9	1.0-3.0	.20	.24			
	26-65	0-5	1.30-1.60	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-2.0	.17	.32			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
103B:													
Charlton--------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
Hollis----------------	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
Rock outcrop----------	---	---	---	---	---	---	---	---	---	---	1	8	0
103C:													
Charlton--------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
Hollis----------------	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
Rock outcrop----------	---	---	---	---	---	---	---	---	---	---	1	8	0
103D:													
Charlton--------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
Hollis----------------	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
Rock outcrop----------	---	---	---	---	---	---	---	---	---	---	1	8	0
104C:													
Hollis----------------	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
Rock outcrop----------	---	---	---	---	---	---	---	---	---	---	1	8	0
Charlton--------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
104D:													
Hollis----------------	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
104D:													
Rock outcrop	---	---	---	---	---	---	---	---	---	---	1	8	0
Charlton	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
105E:													
Rock outcrop	---	---	---	---	---	---	---	---	---	---	1	8	0
Hollis	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
106C:													
Narragansett	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	3	86
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
Hollis	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
Rock outcrop	---	---	---	---	---	---	---	---	---	---	1	8	0
106D:													
Narragansett	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	3	86
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
Hollis	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
Rock outcrop	---	---	---	---	---	---	---	---	---	---	1	8	0
223A:													
Scio	0-8	2-15	1.20-1.50	0.6-2	4.23-14.11	0.18-0.21	0.0-2.9	2.0-8.0	.49	.49	3	3	86
	8-35	2-15	1.20-1.50	0.6-2	4.23-14.11	0.17-0.20	0.0-2.9	1.0-3.0	.24	.24			
	35-65	2-15	1.45-1.65	0.6-2	4.23-14.11	0.17-0.20	0.0-2.9	0.0-2.0	.24	.24			
223B:													
Scio	0-8	2-15	1.20-1.50	0.6-2	4.23-14.11	0.18-0.21	0.0-2.9	2.0-8.0	.49	.49	3	3	86
	8-35	2-15	1.20-1.50	0.6-2	4.23-14.11	0.17-0.20	0.0-2.9	1.0-3.0	.24	.24			
	35-65	2-15	1.45-1.65	0.6-2	4.23-14.11	0.17-0.20	0.0-2.9	0.0-2.0	.24	.24			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
251A:													
Haven	0-2	5-18	1.10-1.40	2-6	14.11-42.34	0.15-0.25	0.0-2.9	2.0-6.0	.32	.37	3	3	86
	2-20	5-18	1.10-1.40	2-6	14.11-42.34	0.09-0.20	0.0-2.9	1.0-3.0	.24	.28			
	20-32	2-18	1.25-1.50	2-6	14.11-42.34	0.08-0.12	0.0-2.9	1.0-3.0	.24	.28			
	32-65	0-3	1.40-1.50	20-100	141.14-705.00	0.01-0.03	0.0-2.9	0.0-2.0	.17	.20			
251B:													
Haven	0-2	5-18	1.10-1.40	2-6	14.11-42.34	0.15-0.25	0.0-2.9	2.0-6.0	.32	.37	3	3	86
	2-20	5-18	1.10-1.40	2-6	14.11-42.34	0.09-0.20	0.0-2.9	1.0-3.0	.24	.28			
	20-32	2-18	1.25-1.50	2-6	14.11-42.34	0.08-0.12	0.0-2.9	1.0-3.0	.24	.28			
	32-65	0-3	1.40-1.50	20-100	141.14-705.00	0.01-0.03	0.0-2.9	0.0-2.0	.17	.20			
253A:													
Hinckley	0-7	4-8	1.00-1.20	6-20	42.34-141.14	0.09-0.13	0.0-2.9	2.0-7.0	.17	.24	3	2	134
	7-17	1-5	1.20-1.40	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-2.0	.17	.49			
	17-65	0-3	1.30-1.50	20-100	141.14-705.00	0.01-0.06	0.0-2.9	0.0-1.0	.10	.55			
253B:													
Hinckley	0-7	4-8	1.00-1.20	6-20	42.34-141.14	0.09-0.13	0.0-2.9	2.0-7.0	.17	.24	3	2	134
	7-17	1-5	1.20-1.40	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-2.0	.17	.49			
	17-65	0-3	1.30-1.50	20-100	141.14-705.00	0.01-0.06	0.0-2.9	0.0-1.0	.10	.55			
253C:													
Hinckley	0-7	4-8	1.00-1.20	6-20	42.34-141.14	0.09-0.13	0.0-2.9	2.0-7.0	.17	.24	3	2	134
	7-17	1-5	1.20-1.40	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-2.0	.17	.49			
	17-65	0-3	1.30-1.50	20-100	141.14-705.00	0.01-0.06	0.0-2.9	0.0-1.0	.10	.55			
253D:													
Hinckley	0-7	4-8	1.00-1.20	6-20	42.34-141.14	0.09-0.13	0.0-2.9	2.0-7.0	.17	.24	3	2	134
	7-17	1-5	1.20-1.40	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-2.0	.17	.49			
	17-65	0-3	1.30-1.50	20-100	141.14-705.00	0.01-0.06	0.0-2.9	0.0-1.0	.10	.55			
253E:													
Hinckley	0-7	4-8	1.00-1.20	6-20	42.34-141.14	0.09-0.13	0.0-2.9	2.0-7.0	.17	.24	3	2	134
	7-17	1-5	1.20-1.40	6-20	42.34-141.14	0.01-0.10	0.0-2.9	0.0-2.0	.17	.49			
	17-65	0-3	1.30-1.50	20-100	141.14-705.00	0.01-0.06	0.0-2.9	0.0-1.0	.10	.55			
254A:													
Merrimac	0-9	3-7	1.10-1.20	2-6	14.11-42.34	0.14-0.19	0.0-2.9	1.0-5.0	.24	.32	3	3	86
	9-18	1-4	1.20-1.40	2-6	14.11-42.34	0.14-0.17	0.0-2.9	1.0-3.0	.24	.32			
	18-26	1-3	1.20-1.40	2-20	14.11-141.14	0.03-0.12	0.0-2.9	0.0-2.0	.17	.28			
	26-33	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			
	33-65	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
254B:													
Merrimac-------------	0-9	3-7	1.10-1.20	2-6	14.11-42.34	0.14-0.19	0.0-2.9	1.0-5.0	.24	.32	3	3	86
	9-18	1-4	1.20-1.40	2-6	14.11-42.34	0.14-0.17	0.0-2.9	1.0-3.0	.24	.32			
	18-26	1-3	1.20-1.40	2-20	14.11-141.14	0.03-0.12	0.0-2.9	0.0-2.0	.17	.28			
	26-33	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			
	33-65	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			
254C:													
Merrimac-------------	0-9	3-7	1.10-1.20	2-6	14.11-42.34	0.14-0.19	0.0-2.9	1.0-5.0	.24	.32	3	3	86
	9-18	1-4	1.20-1.40	2-6	14.11-42.34	0.14-0.17	0.0-2.9	1.0-3.0	.24	.32			
	18-26	1-3	1.20-1.40	2-20	14.11-141.14	0.03-0.12	0.0-2.9	0.0-2.0	.17	.28			
	26-33	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			
	33-65	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			
255A:													
Windsor--------------	0-8	1-3	1.00-1.20	6-20	42.34-141.14	0.09-0.12	0.0-2.9	2.0-4.0	.17	.20	5	2	134
	8-16	0-3	1.30-1.55	6-20	42.34-141.14	0.07-0.10	0.0-2.9	0.0-2.0	.17	.20			
	16-23	0-3	1.30-1.55	6-20	42.34-141.14	0.07-0.10	0.0-2.9	0.0-2.0	.17	.20			
	23-30	0-2	1.40-1.65	6-20	42.34-141.14	0.04-0.10	0.0-2.9	0.0-1.0	.10	.10			
	30-65	0-2	1.40-1.65	6-20	42.34-141.14	0.04-0.10	0.0-2.9	0.0-1.0	.10	.10			
255B:													
Windsor--------------	0-8	1-3	1.00-1.20	6-20	42.34-141.14	0.09-0.12	0.0-2.9	2.0-4.0	.17	.20	5	2	134
	8-16	0-3	1.30-1.55	6-20	42.34-141.14	0.07-0.10	0.0-2.9	0.0-2.0	.17	.20			
	16-23	0-3	1.30-1.55	6-20	42.34-141.14	0.07-0.10	0.0-2.9	0.0-2.0	.17	.20			
	23-30	0-2	1.40-1.65	6-20	42.34-141.14	0.04-0.10	0.0-2.9	0.0-1.0	.10	.10			
	30-65	0-2	1.40-1.65	6-20	42.34-141.14	0.04-0.10	0.0-2.9	0.0-1.0	.10	.10			
255C:													
Windsor--------------	0-8	1-3	1.00-1.20	6-20	42.34-141.14	0.09-0.12	0.0-2.9	2.0-4.0	.17	.20	5	2	134
	8-16	0-3	1.30-1.55	6-20	42.34-141.14	0.07-0.10	0.0-2.9	0.0-2.0	.17	.20			
	16-23	0-3	1.30-1.55	6-20	42.34-141.14	0.07-0.10	0.0-2.9	0.0-2.0	.17	.20			
	23-30	0-2	1.40-1.65	6-20	42.34-141.14	0.04-0.10	0.0-2.9	0.0-1.0	.10	.10			
	30-65	0-2	1.40-1.65	6-20	42.34-141.14	0.04-0.10	0.0-2.9	0.0-1.0	.10	.10			
256A:													
Deerfield------------	0-1	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	5	2	134
	1-11	2-7	1.00-1.20	6-20	42.34-141.14	0.07-0.13	0.0-2.9	1.0-4.0	.17	.20			
	11-17	1-7	1.20-1.45	6-20	42.34-141.14	0.01-0.13	0.0-2.9	0.0-2.0	.17	.20			
	17-25	0-5	1.40-1.50	20-100	141.14-705.00	0.01-0.08	0.0-2.9	0.0-1.0	.17	.20			
	25-65	0-5	1.40-1.50	20-100	141.14-705.00	0.01-0.08	0.0-2.9	0.0-1.0	.17	.20			
256B:													
Deerfield------------	0-1	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	5	2	134
	1-11	2-7	1.00-1.20	6-20	42.34-141.14	0.07-0.13	0.0-2.9	1.0-4.0	.17	.20			
	11-17	1-7	1.20-1.45	6-20	42.34-141.14	0.01-0.13	0.0-2.9	0.0-2.0	.17	.20			
	17-25	0-5	1.40-1.50	20-100	141.14-705.00	0.01-0.08	0.0-2.9	0.0-1.0	.17	.20			
	25-65	0-5	1.40-1.50	20-100	141.14-705.00	0.01-0.08	0.0-2.9	0.0-1.0	.17	.20			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
259A:													
Carver---------------	0-7	1-5	1.00-1.30	20-100	141.14-705.00	0.05-0.12	0.0-2.9	1.0-3.0	.10	.10	5	2	134
	7-13	1-5	1.00-1.30	20-100	141.14-705.00	0.05-0.12	0.0-2.9	0.0-2.0	.10	.10			
	13-21	1-5	1.30-1.50	20-100	141.14-705.00	0.03-0.10	0.0-2.9	0.0-2.0	.10	.10			
	21-35	0-2	1.45-1.55	20-100	141.14-705.00	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
	35-65	0-2	1.45-1.55	20-100	141.14-705.00	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
259B:													
Carver---------------	0-7	1-5	1.00-1.30	20-100	141.14-705.00	0.05-0.12	0.0-2.9	1.0-3.0	.10	.10	5	2	134
	7-13	1-5	1.00-1.30	20-100	141.14-705.00	0.05-0.12	0.0-2.9	0.0-2.0	.10	.10			
	13-21	1-5	1.30-1.50	20-100	141.14-705.00	0.03-0.10	0.0-2.9	0.0-2.0	.10	.10			
	21-35	0-2	1.45-1.55	20-100	141.14-705.00	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
	35-65	0-2	1.45-1.55	20-100	141.14-705.00	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
259C:													
Carver---------------	0-7	1-5	1.00-1.30	20-100	141.14-705.00	0.05-0.12	0.0-2.9	1.0-3.0	.10	.10	5	2	134
	7-13	1-5	1.00-1.30	20-100	141.14-705.00	0.05-0.12	0.0-2.9	0.0-2.0	.10	.10			
	13-21	1-5	1.30-1.50	20-100	141.14-705.00	0.03-0.10	0.0-2.9	0.0-2.0	.10	.10			
	21-35	0-2	1.45-1.55	20-100	141.14-705.00	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
	35-65	0-2	1.45-1.55	20-100	141.14-705.00	0.03-0.04	0.0-2.9	0.0-1.0	.10	.10			
260B:													
Sudbury--------------	0-8	2-6	1.10-1.40	2-6	14.11-42.34	0.10-0.25	0.0-2.9	2.0-6.0	.24	.28	3	2	134
	8-20	2-7	1.15-1.45	2-6	14.11-42.34	0.07-0.18	0.0-2.9	1.0-3.0	.24	.32			
	20-27	0-4	1.25-1.45	2-20	14.11-141.14	0.01-0.15	0.0-2.9	0.0-2.0	.17	.24			
	27-65	0-3	1.30-1.45	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.15			
261A:													
Tisbury--------------	0-8	3-12	1.00-1.30	0.6-2	4.23-14.11	0.20-0.30	0.0-2.9	2.0-6.0	.49	.49	3	3	86
	8-34	3-12	1.30-1.60	0.6-2	4.23-14.11	0.18-0.28	0.0-2.9	0.0-2.0	.64	.64			
	34-65	0-3	1.40-1.65	6-20	42.34-141.14	0.01-0.08	0.0-2.9	0.0-1.0	.10	.28			
261B:													
Tisbury--------------	0-8	3-12	1.00-1.30	0.6-2	4.23-14.11	0.20-0.30	0.0-2.9	2.0-6.0	.49	.49	3	3	86
	8-34	3-12	1.30-1.60	0.6-2	4.23-14.11	0.18-0.28	0.0-2.9	0.0-2.0	.64	.64			
	34-65	0-3	1.40-1.65	6-20	42.34-141.14	0.01-0.08	0.0-2.9	0.0-1.0	.10	.28			
262B:													
Quonset--------------	0-7	2-7	1.20-1.30	2-20	14.11-141.14	0.08-0.18	0.0-2.9	0.6-7.0	.20	.24	3	3	86
	7-18	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	18-28	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	28-65	0-2	1.40-1.50	20-100	141.14-705.00	0.01-0.03	0.0-2.9	0.0-1.0	.10	.37			
262C:													
Quonset--------------	0-7	2-7	1.20-1.30	2-20	14.11-141.14	0.08-0.18	0.0-2.9	0.6-7.0	.20	.24	3	3	86
	7-18	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	18-28	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	28-65	0-2	1.40-1.50	20-100	141.14-705.00	0.01-0.03	0.0-2.9	0.0-1.0	.10	.37			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
262D:													
Quonset	0-7	2-7	1.20-1.30	2-20	14.11-141.14	0.08-0.18	0.0-2.9	0.6-7.0	.20	.24	3	3	86
	7-18	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	18-28	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	28-65	0-2	1.40-1.50	20-100	141.14-705.00	0.01-0.03	0.0-2.9	0.0-1.0	.10	.37			
262E:													
Quonset	0-7	2-7	1.20-1.30	2-20	14.11-141.14	0.08-0.18	0.0-2.9	0.6-7.0	.20	.24	3	3	86
	7-18	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	18-28	1-4	1.40-1.50	2-20	14.11-141.14	0.04-0.07	0.0-2.9	0.0-2.0	.17	.37			
	28-65	0-2	1.40-1.50	20-100	141.14-705.00	0.01-0.03	0.0-2.9	0.0-1.0	.10	.37			
300B:													
Montauk	0-7	6-18	1.00-1.25	0.6-6	4.23-42.34	0.09-0.14	0.0-2.9	4.0-5.0	.24	.28	3	3	86
	7-20	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	20-29	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	29-65	1-18	1.70-1.90	0.06-0.6	0.42-4.23	0.02-0.08	0.0-2.9	0.0-2.0	.24	.28			
300C:													
Montauk	0-7	6-18	1.00-1.25	0.6-6	4.23-42.34	0.09-0.14	0.0-2.9	4.0-5.0	.24	.28	3	3	86
	7-20	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	20-29	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	29-65	1-18	1.70-1.90	0.06-0.6	0.42-4.23	0.02-0.08	0.0-2.9	0.0-2.0	.24	.28			
300D:													
Montauk	0-7	6-18	1.00-1.25	0.6-6	4.23-42.34	0.09-0.14	0.0-2.9	4.0-5.0	.24	.28	3	3	86
	7-20	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	20-29	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	29-65	1-18	1.70-1.90	0.06-0.6	0.42-4.23	0.02-0.08	0.0-2.9	0.0-2.0	.24	.28			
302B:													
Montauk	0-7	6-18	1.00-1.25	0.6-6	4.23-42.34	0.09-0.14	0.0-2.9	4.0-5.0	.24	.28	3	8	0
	7-20	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	20-29	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	29-65	1-18	1.70-1.90	0.06-0.6	0.42-4.23	0.02-0.08	0.0-2.9	0.0-2.0	.24	.28			
302C:													
Montauk	0-7	6-18	1.00-1.25	0.6-6	4.23-42.34	0.09-0.14	0.0-2.9	4.0-5.0	.24	.28	3	8	0
	7-20	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	20-29	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	29-65	1-18	1.70-1.90	0.06-0.6	0.42-4.23	0.02-0.08	0.0-2.9	0.0-2.0	.24	.28			
302D:													
Montauk	0-7	6-18	1.00-1.25	0.6-6	4.23-42.34	0.09-0.14	0.0-2.9	4.0-5.0	.24	.28	3	8	0
	7-20	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	20-29	6-18	1.30-1.60	0.6-6	4.23-42.34	0.10-0.16	0.0-2.9	1.0-3.0	.24	.28			
	29-65	1-18	1.70-1.90	0.06-0.6	0.42-4.23	0.02-0.08	0.0-2.9	0.0-2.0	.24	.28			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
305B:													
Paxton---------------	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	3	86
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
305C:													
Paxton---------------	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	3	86
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
305D:													
Paxton---------------	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	3	86
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
305E:													
Paxton---------------	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	3	86
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
307B:													
Paxton---------------	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	8	0
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
307C:													
Paxton---------------	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	8	0
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
307D:													
Paxton---------------	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	8	0
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
307E:													
Paxton	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	8	0
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
310A:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
310B:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
310C:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
311B:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
311C:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
312B:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
312C:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
315B:													
Scituate-------------	0-8	4-10	1.00-1.30	0.6-2	4.23-14.11	0.11-0.21	0.0-2.9	2.0-6.0	.24	.32	3	3	86
	8-20	2-9	1.25-1.50	0.6-2	4.23-14.11	0.09-0.16	0.0-2.9	1.0-3.0	.24	.43			
	20-27	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
	27-65	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
315C:													
Scituate-------------	0-8	4-10	1.00-1.30	0.6-2	4.23-14.11	0.11-0.21	0.0-2.9	2.0-6.0	.24	.32	3	3	86
	8-20	2-9	1.25-1.50	0.6-2	4.23-14.11	0.09-0.16	0.0-2.9	1.0-3.0	.24	.43			
	20-27	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
	27-65	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
317B:													
Scituate-------------	0-8	4-10	1.00-1.30	0.6-2	4.23-14.11	0.11-0.21	0.0-2.9	2.0-6.0	.24	.32	3	8	0
	8-20	2-9	1.25-1.50	0.6-2	4.23-14.11	0.09-0.16	0.0-2.9	1.0-3.0	.24	.43			
	20-27	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
	27-65	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
317C:													
Scituate-------------	0-8	4-10	1.00-1.30	0.6-2	4.23-14.11	0.11-0.21	0.0-2.9	2.0-6.0	.24	.32	3	8	0
	8-20	2-9	1.25-1.50	0.6-2	4.23-14.11	0.09-0.16	0.0-2.9	1.0-3.0	.24	.43			
	20-27	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
	27-65	2-9	1.75-2.00	0.06-0.2	0.42-1.41	0.01-0.07	0.0-2.9	0.0-2.0	.24	.55			
320B:													
Birchwood------------	0-5	1-5	1.00-1.25	2-20	14.11-141.14	0.12-0.20	0.0-2.9	2.0-5.0	.24	.28	3	3	86
	5-25	1-3	1.30-1.55	6-20	42.34-141.14	0.06-0.14	0.0-2.9	1.0-3.0	.17	.24			
	25-38	1-3	1.30-1.55	6-20	42.34-141.14	0.06-0.14	0.0-2.9	1.0-3.0	.17	.24			
	38-65	3-15	1.70-2.00	0.01-0.2	0.09-1.41	0.08-0.12	0.0-2.9	0.0-2.0	.24	.37			
325D:													
Newport--------------	0-8	4-10	1.10-1.30	0.6-6	4.23-42.34	0.11-0.21	0.0-2.9	2.0-6.0	.24	.37	3	5	56
	8-18	3-10	1.30-1.60	0.6-6	4.23-42.34	0.11-0.21	0.0-2.9	1.0-3.0	.37	.55			
	18-24	3-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
	24-65	3-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
330B:													
Bernardston----------	0-3	2-12	1.00-1.15	0.6-2	4.23-14.11	0.15-0.22	0.0-2.9	2.0-5.0	.28	.37	3	3	86
	3-21	5-19	1.25-1.50	0.6-2	4.23-14.11	0.13-0.20	0.0-2.9	1.0-3.0	.37	.64			
	21-65	5-19	1.75-1.90	0.06-0.2	0.42-1.41	0.07-0.16	0.0-2.9	0.0-2.0	.28	.55			
330C:													
Bernardston----------	0-3	2-12	1.00-1.15	0.6-2	4.23-14.11	0.15-0.22	0.0-2.9	2.0-5.0	.28	.37	3	3	86
	3-21	5-19	1.25-1.50	0.6-2	4.23-14.11	0.13-0.20	0.0-2.9	1.0-3.0	.37	.64			
	21-65	5-19	1.75-1.90	0.06-0.2	0.42-1.41	0.07-0.16	0.0-2.9	0.0-2.0	.28	.55			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
330D:													
Bernardston----------	0-3	2-12	1.00-1.15	0.6-2	4.23-14.11	0.15-0.22	0.0-2.9	2.0-5.0	.28	.37	3	3	86
	3-21	5-19	1.25-1.50	0.6-2	4.23-14.11	0.13-0.20	0.0-2.9	1.0-3.0	.37	.64			
	21-65	5-19	1.75-1.90	0.06-0.2	0.42-1.41	0.07-0.16	0.0-2.9	0.0-2.0	.28	.55			
330E:													
Bernardston----------	0-3	2-12	1.00-1.15	0.6-2	4.23-14.11	0.15-0.22	0.0-2.9	2.0-5.0	.28	.37	3	3	86
	3-21	5-19	1.25-1.50	0.6-2	4.23-14.11	0.13-0.20	0.0-2.9	1.0-3.0	.37	.64			
	21-65	5-19	1.75-1.90	0.06-0.2	0.42-1.41	0.07-0.16	0.0-2.9	0.0-2.0	.28	.55			
335B:													
Rainbow--------------	0-8	2-12	1.10-1.35	0.6-2	4.23-14.11	0.14-0.24	0.0-2.9	2.0-5.0	.32	.37	3	8	0
	8-22	2-12	1.40-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	22-32	2-12	1.40-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	32-65	2-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
336B:													
Rainbow--------------	0-8	2-12	1.10-1.35	0.6-2	4.23-14.11	0.14-0.24	0.0-2.9	2.0-5.0	.32	.37	3	8	0
	8-22	2-12	1.40-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	22-32	2-12	1.40-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	32-65	2-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
340B:													
Broadbrook-----------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	3	86
	2-10	4-10	1.10-1.35	0.6-2	4.23-14.11	0.14-0.24	0.0-2.9	2.0-5.0	.32	.37			
	10-20	4-10	1.35-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	20-65	2-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
340D:													
Broadbrook-----------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	3	86
	2-10	4-10	1.10-1.35	0.6-2	4.23-14.11	0.14-0.24	0.0-2.9	2.0-5.0	.32	.37			
	10-20	4-10	1.35-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	20-65	2-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
341B:													
Broadbrook-----------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-10	4-10	1.10-1.35	0.6-2	4.23-14.11	0.14-0.24	0.0-2.9	2.0-5.0	.32	.37			
	10-20	4-10	1.35-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	20-65	2-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
341C:													
Broadbrook-----------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-10	4-10	1.10-1.35	0.6-2	4.23-14.11	0.14-0.24	0.0-2.9	2.0-5.0	.32	.37			
	10-20	4-10	1.35-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	20-65	2-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
341D:													
Broadbrook-----------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-10	4-10	1.10-1.35	0.6-2	4.23-14.11	0.14-0.24	0.0-2.9	2.0-5.0	.32	.37			
	10-20	4-10	1.35-1.60	0.6-2	4.23-14.11	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	20-65	2-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
345A:													
Pittstown------------	0-2	2-12	1.00-1.30	0.6-2	4.23-14.11	0.15-0.20	0.0-2.9	2.0-6.0	.28	.37	3	3	86
	2-17	2-12	1.30-1.60	0.6-2	4.23-14.11	0.15-0.20	0.0-2.9	1.0-3.0	.37	.55			
	17-65	2-12	1.70-2.00	0.06-0.6	0.42-4.23	0.10-0.15	0.0-2.9	0.0-2.0	.28	.49			
345B:													
Pittstown------------	0-2	2-12	1.00-1.30	0.6-2	4.23-14.11	0.15-0.20	0.0-2.9	2.0-6.0	.28	.37	3	3	86
	2-17	2-12	1.30-1.60	0.6-2	4.23-14.11	0.15-0.20	0.0-2.9	1.0-3.0	.37	.55			
	17-65	2-12	1.70-2.00	0.06-0.6	0.42-4.23	0.10-0.15	0.0-2.9	0.0-2.0	.28	.49			
405B:													
Charlton-------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
405C:													
Charlton-------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
407B:													
Charlton-------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	8	0
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
407C:													
Charlton-------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	8	0
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
407D:													
Charlton-------------	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	8	0
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
415B:													
Narragansett---------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	3	86
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
415C:													
Narragansett---------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	3	86
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
415D:													
Narragansett---------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	3	86
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
416B:													
Narragansett---------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
416C:													
Narragansett---------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
416D:													
Narragansett---------	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-7	4-10	1.10-1.35	2-6	14.11-42.34	0.12-0.22	0.0-2.9	2.0-6.0	.24	.32			
	7-35	4-10	1.40-1.60	2-6	14.11-42.34	0.12-0.22	0.0-2.9	1.0-3.0	.43	.55			
	35-60	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
	60-65	0-2	1.40-1.70	2-20	14.11-141.14	0.02-0.10	0.0-2.9	0.0-1.0	.24	.55			
420B:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	3	86
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
420C:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	3	86
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
420D:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	3	86
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
422B:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	8	0
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
422C:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	8	0
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
422D:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	8	0
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
424B:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	8	0
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
424C:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	8	0
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
424D:													
Canton---------------	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	8	0
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			
600:													
Pits, gravel---------	---	---	---	---	---	---	---	---	---	---	--	2	134
601:													
Pits, quarry---------	---	---	---	---	---	---	---	---	---	---	--	8	0
602:													
Urban land-----------	---	---	---	---	---	---	---	---	---	---	--	8	0
603:													
Urban land-----------	---	---	---	---	---	---	---	---	---	---	--	8	0
621B:													
Scio-----------------	0-8	2-15	1.20-1.50	0.6-2	4.23-14.11	0.18-0.21	0.0-2.9	2.0-8.0	.49	.49	3	3	86
	8-35	2-15	1.20-1.50	0.6-2	4.23-14.11	0.17-0.20	0.0-2.9	1.0-3.0	.24	.24			
	35-65	2-15	1.45-1.65	0.6-2	4.23-14.11	0.17-0.20	0.0-2.9	0.0-2.0	.24	.24			
Urban land-----------	---	---	---	---	---	---	---	---	---	---	--	8	0

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
622C:													
Paxton	0-7	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-5.0	.24	.32	3	3	86
	7-13	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	13-22	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	22-26	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
	26-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
Urban land	---	---	---	---	---	---	---	---	---	---	--	8	0
623C:													
Woodbridge	0-2	---	0.10-0.30	0.6-6	4.23-42.34	0.35-0.45	0.0-2.9	50-99	---	---	3	8	0
	2-4	3-12	1.00-1.25	0.6-2	4.23-14.11	0.10-0.20	0.0-2.9	2.0-6.0	.24	.32			
	4-30	3-12	1.35-1.60	0.6-2	4.23-14.11	0.08-0.18	0.0-2.9	1.0-3.0	.32	.49			
	30-65	3-12	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.10	0.0-2.9	0.0-2.0	.24	.37			
Urban land	---	---	---	---	---	---	---	---	---	---	--	8	0
624B:													
Haven	0-2	5-18	1.10-1.40	2-6	14.11-42.34	0.15-0.25	0.0-2.9	2.0-6.0	.32	.37	3	3	86
	2-20	5-18	1.10-1.40	2-6	14.11-42.34	0.09-0.20	0.0-2.9	1.0-3.0	.24	.28			
	20-32	2-18	1.25-1.50	2-6	14.11-42.34	0.08-0.12	0.0-2.9	1.0-3.0	.24	.28			
	32-65	0-3	1.40-1.50	20-100	141.14-705.00	0.01-0.03	0.0-2.9	0.0-2.0	.17	.20			
Urban land	---	---	---	---	---	---	---	---	---	---	--	8	0
626B:													
Merrimac	0-9	3-7	1.10-1.20	2-6	14.11-42.34	0.14-0.19	0.0-2.9	1.0-5.0	.24	.32	3	3	86
	9-18	1-4	1.20-1.40	2-6	14.11-42.34	0.14-0.17	0.0-2.9	1.0-3.0	.24	.32			
	18-26	1-3	1.20-1.40	2-20	14.11-141.14	0.03-0.12	0.0-2.9	0.0-2.0	.17	.28			
	26-33	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			
	33-65	0-3	1.30-1.50	6-20	42.34-141.14	0.01-0.06	0.0-2.9	0.0-1.0	.10	.37			
Urban land	---	---	---	---	---	---	---	---	---	---	--	8	0
627C:													
Newport	0-8	4-10	1.10-1.30	0.6-6	4.23-42.34	0.11-0.21	0.0-2.9	2.0-6.0	.24	.37	3	5	56
	8-18	3-10	1.30-1.60	0.6-6	4.23-42.34	0.11-0.21	0.0-2.9	1.0-3.0	.37	.55			
	18-24	3-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
	24-65	3-10	1.70-2.00	0.01-0.2	0.09-1.41	0.05-0.12	0.0-2.9	0.0-2.0	.24	.43			
Urban land	---	---	---	---	---	---	---	---	---	---	--	8	0
629C:													
Canton	0-8	1-8	0.90-1.20	2-6	14.11-42.34	0.11-0.19	0.0-2.9	1.0-6.0	.24	.32	3	3	86
	8-21	1-8	1.20-1.50	2-6	14.11-42.34	0.09-0.17	0.0-2.9	0.0-2.0	.28	.37			
	21-65	0-5	1.30-1.50	6-20	42.34-141.14	0.04-0.08	0.0-2.9	0.0-2.0	.17	.20			

Table 15.—Physical Properties of the Soils—continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									Kw	Kf	T		
	In	Pct	g/cc	In/hr	um/sec	In/in	Pct	Pct					
629C:													
Charlton	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	3	86
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
Urban land	---	---	---	---	---	---	---	---	---	---	--	8	0
631C:													
Charlton	0-5	3-8	1.00-1.25	0.6-6	4.23-42.34	0.08-0.23	0.0-2.9	2.0-5.0	.20	.32	3	8	0
	5-22	3-8	1.40-1.65	0.6-6	4.23-42.34	0.07-0.20	0.0-2.9	0.0-2.0	.24	.37			
	22-65	1-8	1.45-1.70	0.6-6	4.23-42.34	0.05-0.16	0.0-2.9	0.0-1.0	.24	.49			
Urban land	---	---	---	---	---	---	---	---	---	---	--	8	0
Hollis	0-2	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32	1	3	86
	2-14	3-10	1.10-1.40	0.6-6	4.23-42.34	0.10-0.18	0.0-2.9	2.0-5.0	.20	.32			
	14-18	---	---	0.0000-0.1	0.00-1.00	---	---	---	---	---			
652:													
Udorthents, refuse substratum	---	---	---	---	---	---	---	---	---	---	--	---	---
653:													
Udorthents, sandy	---	---	---	---	---	---	---	---	---	---	--	2	134
654:													
Udorthents, loamy	---	---	---	---	---	---	---	---	---	---	--	3	86
655:													
Udorthents, wet substratum	---	---	---	---	---	---	---	---	---	---	--	---	---
656:													
Udorthents	---	---	---	---	---	---	---	---	---	---	--	---	---
Urban land	---	---	---	---	---	---	---	---	---	---	--	---	---

Table 16.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	meq/100 g	meq/100 g	pH	Pct
1:					
Water----------------	---	---	---	---	---
2A:					
Pootatuck------------	0-7	2.2-6.2	---	4.5-6.5	0
	7-15	1.2-5.7	---	4.5-6.5	0
	15-23	1.2-5.7	---	4.5-6.5	0
	23-29	0.0-2.4	---	4.5-6.5	0
	29-65	0.0-2.4	---	4.5-6.5	0
4A:					
Rippowam-------------	0-7	2.1-5.9	---	4.5-6.5	0
	7-18	1.1-5.7	---	4.5-6.5	0
	18-40	1.1-5.7	---	4.5-6.5	0
	40-65	0.0-2.2	---	4.5-6.5	0
6A:					
Scarboro-------------	0-3	71-134	---	4.5-6.0	0
	3-11	---	1.3-7.7	4.5-6.0	0
	11-21	---	1.1-5.9	4.5-6.0	0
	21-29	---	0.2-3.0	4.5-6.0	0
	29-65	---	0.1-3.1	4.5-6.5	0
8A:					
Limerick-------------	0-3	3.7-8.8	---	5.1-6.0	0
	3-40	---	1.3-6.5	5.1-6.0	0
	40-65	1.0-7.0	---	5.6-7.3	0
30B:					
Raynham--------------	0-8	3.3-15	---	5.1-7.3	0-2
	8-33	2.8-12	---	5.1-7.3	0-2
	33-65	1.6-9.3	---	5.6-7.3	0-5
32B:					
Wareham--------------	0-10	---	0.8-2.6	3.5-5.5	0
	10-24	---	0.0-1.8	3.5-5.5	0
	24-34	---	0.0-1.4	3.5-5.5	0
	34-65	---	0.0-1.0	3.5-5.5	0
33B:					
Raypol---------------	0-9	---	1.9-8.8	4.5-5.5	0
	9-19	---	1.9-8.1	4.5-5.5	0
	19-48	---	0.2-2.5	4.5-5.5	0
	48-65	0.0-2.0	---	5.1-6.5	0
36A:					
Saco-----------------	0-13	28-43	---	5.1-6.5	0
	13-30	2.7-14	---	5.1-6.5	0
	30-45	2.5-13	---	5.6-7.3	0
	45-65	1.3-7.8	---	5.6-7.3	0
44A:					
Birdsall-------------	0-15	---	1.9-12	4.5-6.0	0
	15-30	2.8-12	---	5.1-7.3	0
	30-65	1.6-11	---	5.1-7.3	0
51A:					
Swansea--------------	0-8	---	---	3.5-4.4	0
	8-23	---	---	3.5-4.4	0
	23-37	---	0.3-7.6	3.5-5.5	0
	37-65	---	0.3-3.5	3.5-5.5	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
52A:					
Freetown-------------	0-9	---	---	3.5-4.4	0
	9-65	---	---	3.5-4.4	0
53A:					
Freetown, ponded-----	0-9	---	---	3.5-4.4	0
	9-65	---	---	3.5-4.4	0
71B:					
Ridgebury------------	0-7	---	2.3-7.7	4.5-5.5	0
	7-10	---	0.4-3.9	4.5-5.5	0
	10-65	1.2-6.2	---	5.1-6.0	0
73B:					
Whitman--------------	0-10	5.1-8.1	---	4.5-6.5	0
	10-18	2.0-4.1	---	4.5-6.5	0
	18-65	0.7-4.9	---	4.5-6.5	0
97A:					
Suncook--------------	0-6	1.1-3.1	---	4.5-6.5	0
	6-65	0.0-2.7	---	4.5-6.5	0
98A:					
Winooski-------------	0-6	4.5-15	---	4.5-7.3	0
	6-65	4.5-14	---	4.5-7.3	0
99A:					
Occum----------------	0-9	2.2-15	---	4.5-6.5	0
	9-21	2.2-11	---	4.5-6.5	0
	21-26	0.0-4.9	---	4.5-6.5	0
	26-65	0.0-4.7	---	4.5-6.5	0
103B:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
Rock outcrop---------	---	---	---	---	---
103C:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
Rock outcrop---------	---	---	---	---	---
103D:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	meq/100 g	meq/100 g	pH	Pct
103D:					
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
Rock outcrop---------	---	---	---	---	---
104C:					
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
Rock outcrop---------	---	---	---	---	---
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
104D:					
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
Rock outcrop---------	---	---	---	---	---
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
105E:					
Rock outcrop---------	---	---	---	---	---
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
106C:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
Rock outcrop---------	---	---	---	---	---
106D:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0
Hollis---------------	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
Rock outcrop---------	---	---	---	---	---

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
223A:					
Scio-----------------	0-8	---	1.5-9.9	4.5-5.5	0
	8-35	2.0-12	---	5.1-6.0	0
	35-65	1.2-11	---	5.1-6.0	0-1
223B:					
Scio-----------------	0-8	---	1.5-9.9	4.5-5.5	0
	8-35	2.0-12	---	5.1-6.0	0
	35-65	1.2-11	---	5.1-6.0	0-1
251A:					
Haven----------------	0-2	---	2.5-12	4.5-6.0	0
	2-20	---	2.1-9.8	4.5-6.0	0
	20-32	---	1.3-9.8	4.5-6.0	0
	32-65	---	0.1-3.3	4.5-6.0	0
251B:					
Haven----------------	0-2	---	2.5-12	4.5-6.0	0
	2-20	---	2.1-9.8	4.5-6.0	0
	20-32	---	1.3-9.8	4.5-6.0	0
	32-65	---	0.1-3.3	4.5-6.0	0
253A:					
Hinckley-------------	0-7	---	2.3-6.7	5.1-6.0	0
	7-17	---	0.1-2.8	5.1-6.0	0
	17-65	0.0-2.7	---	5.1-6.0	0
253B:					
Hinckley-------------	0-7	---	2.3-6.7	5.1-6.0	0
	7-17	---	0.1-2.8	5.1-6.0	0
	17-65	0.0-2.7	---	5.1-6.0	0
253C:					
Hinckley-------------	0-7	---	2.3-6.7	5.1-6.0	0
	7-17	---	0.1-2.8	5.1-6.0	0
	17-65	0.0-2.7	---	5.1-6.0	0
253D:					
Hinckley-------------	0-7	---	2.3-6.7	5.1-6.0	0
	7-17	---	0.1-2.8	5.1-6.0	0
	17-65	0.0-2.7	---	5.1-6.0	0
253E:					
Hinckley-------------	0-7	---	2.3-6.7	5.1-6.0	0
	7-17	---	0.1-2.8	5.1-6.0	0
	17-65	0.0-2.7	---	5.1-6.0	0
254A:					
Merrimac-------------	0-9	---	1.0-6.8	3.5-6.0	0
	9-18	---	0.5-4.3	3.5-6.0	0
	18-26	0.7-3.1	---	3.5-6.0	0
	26-33	0.0-2.8	---	3.5-6.0	0
	33-65	0.0-2.8	---	3.5-6.0	0
254B:					
Merrimac-------------	0-9	---	1.0-6.8	3.5-6.0	0
	9-18	---	0.5-4.3	3.5-6.0	0
	18-26	0.7-3.1	---	3.5-6.0	0
	26-33	0.0-2.8	---	3.5-6.0	0
	33-65	0.0-2.8	---	3.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	meq/100 g	meq/100 g	pH	Pct
254C:					
Merrimac	0-9	---	1.0-6.8	3.5-6.0	0
	9-18	---	0.5-4.3	3.5-6.0	0
	18-26	0.7-3.1	---	3.5-6.0	0
	26-33	0.0-2.8	---	3.5-6.0	0
	33-65	0.0-2.8	---	3.5-6.0	0
255A:					
Windsor	0-8	---	0.8-2.4	4.5-6.0	0
	8-16	---	0.0-1.8	4.5-6.0	0
	16-23	---	0.0-1.8	4.5-6.0	0
	23-30	0.0-1.9	---	5.1-6.5	0
	30-65	0.0-1.9	---	5.1-6.5	0
255B:					
Windsor	0-8	---	0.8-2.4	4.5-6.0	0
	8-16	---	0.0-1.8	4.5-6.0	0
	16-23	---	0.0-1.8	4.5-6.0	0
	23-30	0.0-1.9	---	5.1-6.5	0
	30-65	0.0-1.9	---	5.1-6.5	0
255C:					
Windsor	0-8	---	0.8-2.4	4.5-6.0	0
	8-16	---	0.0-1.8	4.5-6.0	0
	16-23	---	0.0-1.8	4.5-6.0	0
	23-30	0.0-1.9	---	5.1-6.5	0
	30-65	0.0-1.9	---	5.1-6.5	0
256A:					
Deerfield	0-1	---	---	3.5-6.0	0
	1-11	1.9-6.4	---	4.5-6.0	0
	11-17	0.8-6.0	---	4.5-6.0	0
	17-25	0.0-4.2	---	4.5-6.0	0
	25-65	0.0-4.2	---	4.5-6.0	0
256B:					
Deerfield	0-1	---	---	3.5-6.0	0
	1-11	1.9-6.4	---	4.5-6.0	0
	11-17	0.8-6.0	---	4.5-6.0	0
	17-25	0.0-4.2	---	4.5-6.0	0
	25-65	0.0-4.2	---	4.5-6.0	0
259A:					
Carver	0-7	---	0.6-3.3	3.5-6.0	0
	7-13	0.8-4.5	---	3.5-6.0	0
	13-21	0.8-4.5	---	3.5-6.0	0
	21-35	0.0-1.9	---	3.5-6.0	0
	35-65	0.0-1.9	---	3.5-6.0	0
259B:					
Carver	0-7	---	0.6-3.3	3.5-6.0	0
	7-13	0.8-4.5	---	3.5-6.0	0
	13-21	0.8-4.5	---	3.5-6.0	0
	21-35	0.0-1.9	---	3.5-6.0	0
	35-65	0.0-1.9	---	3.5-6.0	0
259C:					
Carver	0-7	---	0.6-3.3	3.5-6.0	0
	7-13	0.8-4.5	---	3.5-6.0	0
	13-21	0.8-4.5	---	3.5-6.0	0
	21-35	0.0-1.9	---	3.5-6.0	0
	35-65	0.0-1.9	---	3.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
260B:					
Sudbury--------------	0-8	---	1.5-6.6	4.5-6.0	0
	8-20	---	1.3-5.9	4.5-6.0	0
	20-27	0.0-3.9	---	4.5-6.0	0
	27-65	0.0-2.8	---	4.5-6.0	0
261A:					
Tisbury--------------	0-8	---	1.9-9.6	4.5-6.0	0
	8-34	---	0.5-7.0	4.5-6.0	0
	34-65	---	0.1-2.7	4.5-6.0	0
261B:					
Tisbury--------------	0-8	---	1.9-9.6	4.5-6.0	0
	8-34	---	0.5-7.0	4.5-6.0	0
	34-65	---	0.1-2.7	4.5-6.0	0
262B:					
Quonset--------------	0-7	---	0.8-6.0	3.5-5.5	0
	7-18	0.8-3.7	---	3.5-6.0	0
	18-28	0.8-3.7	---	3.5-6.0	0
	28-65	0.0-1.9	---	3.5-6.5	0
262C:					
Quonset--------------	0-7	---	0.8-6.0	3.5-5.5	0
	7-18	0.8-3.7	---	3.5-6.0	0
	18-28	0.8-3.7	---	3.5-6.0	0
	28-65	0.0-1.9	---	3.5-6.5	0
262D:					
Quonset--------------	0-7	---	0.8-6.0	3.5-5.5	0
	7-18	0.8-3.7	---	3.5-6.0	0
	18-28	0.8-3.7	---	3.5-6.0	0
	28-65	0.0-1.9	---	3.5-6.5	0
262E:					
Quonset--------------	0-7	---	0.8-6.0	3.5-5.5	0
	7-18	0.8-3.7	---	3.5-6.0	0
	18-28	0.8-3.7	---	3.5-6.0	0
	28-65	0.0-1.9	---	3.5-6.5	0
300B:					
Montauk--------------	0-7	5.9-15	---	3.5-6.0	0
	7-20	4.9-14	---	4.5-6.0	0
	20-29	4.9-14	---	4.5-6.0	0
	29-65	0.7-13	---	4.5-6.0	0
300C:					
Montauk--------------	0-7	5.9-15	---	3.5-6.0	0
	7-20	4.9-14	---	4.5-6.0	0
	20-29	4.9-14	---	4.5-6.0	0
	29-65	0.7-13	---	4.5-6.0	0
300D:					
Montauk--------------	0-7	5.9-15	---	3.5-6.0	0
	7-20	4.9-14	---	4.5-6.0	0
	20-29	4.9-14	---	4.5-6.0	0
	29-65	0.7-13	---	4.5-6.0	0
302B:					
Montauk--------------	0-7	5.9-15	---	3.5-6.0	0
	7-20	4.9-14	---	4.5-6.0	0
	20-29	4.9-14	---	4.5-6.0	0
	29-65	0.7-13	---	4.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	meq/100 g	meq/100 g	pH	Pct
302C:					
Montauk	0-7	5.9-15	---	3.5-6.0	0
	7-20	4.9-14	---	4.5-6.0	0
	20-29	4.9-14	---	4.5-6.0	0
	29-65	0.7-13	---	4.5-6.0	0
302D:					
Montauk	0-7	5.9-15	---	3.5-6.0	0
	7-20	4.9-14	---	4.5-6.0	0
	20-29	4.9-14	---	4.5-6.0	0
	29-65	0.7-13	---	4.5-6.0	0
305B:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
305C:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
305D:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
305E:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
307B:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
307C:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
307D:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	meq/100 g	meq/100 g	pH	Pct
307E:					
Paxton---------------	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
310A:					
Woodbridge-----------	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
310B:					
Woodbridge-----------	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
310C:					
Woodbridge-----------	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
311B:					
Woodbridge-----------	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
311C:					
Woodbridge-----------	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
312B:					
Woodbridge-----------	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
312C:					
Woodbridge-----------	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
315B:					
Scituate-------------	0-8	---	1.4-8.7	3.5-6.0	0
	8-20	2.0-7.8	---	3.5-6.0	0
	20-27	1.2-7.4	---	3.5-6.0	0
	27-65	1.2-7.4	---	3.5-6.0	0
315C:					
Scituate-------------	0-8	---	1.4-8.7	3.5-6.0	0
	8-20	2.0-7.8	---	3.5-6.0	0
	20-27	1.2-7.4	---	3.5-6.0	0
	27-65	1.2-7.4	---	3.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	meq/100 g	meq/100 g	pH	Pct
317B:					
Scituate-------------	0-8	---	1.4-8.7	3.5-6.0	0
	8-20	2.0-7.8	---	3.5-6.0	0
	20-27	1.2-7.4	---	3.5-6.0	0
	27-65	1.2-7.4	---	3.5-6.0	0
317C:					
Scituate-------------	0-8	---	1.4-8.7	3.5-6.0	0
	8-20	2.0-7.8	---	3.5-6.0	0
	20-27	1.2-7.4	---	3.5-6.0	0
	27-65	1.2-7.4	---	3.5-6.0	0
320B:					
Birchwood------------	0-5	---	0.8-4.0	4.5-6.5	0
	5-25	---	0.6-2.2	4.5-6.5	0
	25-38	---	0.6-2.2	4.5-6.5	0
	38-65	---	0.3-6.9	4.5-6.5	0
325D:					
Newport--------------	0-8	---	2.2-8.7	4.5-6.0	0
	8-18	---	1.6-7.1	4.5-6.0	0
	18-24	1.6-8.1	---	4.5-6.0	0
	24-65	1.6-8.1	---	4.5-6.0	0
330B:					
Bernardston----------	0-3	---	1.5-9.1	4.5-6.0	0
	3-21	---	2.1-10	4.5-6.0	0
	21-65	2.5-13	---	4.5-6.0	0
330C:					
Bernardston----------	0-3	---	1.5-9.1	4.5-6.0	0
	3-21	---	2.1-10	4.5-6.0	0
	21-65	2.5-13	---	4.5-6.0	0
330D:					
Bernardston----------	0-3	---	1.5-9.1	4.5-6.0	0
	3-21	---	2.1-10	4.5-6.0	0
	21-65	2.5-13	---	4.5-6.0	0
330E:					
Bernardston----------	0-3	---	1.5-9.1	4.5-6.0	0
	3-21	---	2.1-10	4.5-6.0	0
	21-65	2.5-13	---	4.5-6.0	0
335B:					
Rainbow--------------	0-8	---	1.5-9.1	4.5-6.0	0
	8-22	---	1.3-7.8	4.5-6.0	0
	22-32	---	1.3-7.8	4.5-6.0	0
	32-65	1.2-9.3	---	4.5-6.0	0
336B:					
Rainbow--------------	0-8	---	1.5-9.1	4.5-6.0	0
	8-22	---	1.3-7.8	4.5-6.0	0
	22-32	---	1.3-7.8	4.5-6.0	0
	32-65	1.2-9.3	---	4.5-6.0	0
340B:					
Broadbrook-----------	0-2	---	---	4.5-6.0	0
	2-10	---	2.2-8.2	4.5-6.0	0
	10-20	---	1.8-7.1	4.5-6.0	0
	20-65	---	0.4-6.3	4.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
340D:					
Broadbrook-----------	0-2	---	---	4.5-6.0	0
	2-10	---	2.2-8.2	4.5-6.0	0
	10-20	---	1.8-7.1	4.5-6.0	0
	20-65	---	0.4-6.3	4.5-6.0	0
341B:					
Broadbrook-----------	0-2	---	---	4.5-6.0	0
	2-10	---	2.2-8.2	4.5-6.0	0
	10-20	---	1.8-7.1	4.5-6.0	0
	20-65	---	0.4-6.3	4.5-6.0	0
341C:					
Broadbrook-----------	0-2	---	---	4.5-6.0	0
	2-10	---	2.2-8.2	4.5-6.0	0
	10-20	---	1.8-7.1	4.5-6.0	0
	20-65	---	0.4-6.3	4.5-6.0	0
341D:					
Broadbrook-----------	0-2	---	---	4.5-6.0	0
	2-10	---	2.2-8.2	4.5-6.0	0
	10-20	---	1.8-7.1	4.5-6.0	0
	20-65	---	0.4-6.3	4.5-6.0	0
345A:					
Pittstown------------	0-2	---	1.5-9.6	4.5-6.0	0
	2-17	---	1.3-7.8	4.5-6.0	0
	17-65	---	0.4-7.0	4.5-6.0	0
345B:					
Pittstown------------	0-2	---	1.5-9.6	4.5-6.0	0
	2-17	---	1.3-7.8	4.5-6.0	0
	17-65	---	0.4-7.0	4.5-6.0	0
405B:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
405C:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
407B:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
407C:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
407D:					
Charlton-------------	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
415B:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
415C:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0
415D:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0
416B:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0
416C:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0
416D:					
Narragansett---------	0-2	---	---	3.5-6.0	0
	2-7	---	1.4-8.7	3.5-6.0	0
	7-35	3.6-8.5	---	3.5-6.0	0
	35-60	0.0-2.0	---	3.5-6.0	0
	60-65	0.0-2.0	---	3.5-6.0	0
420B:					
Canton---------------	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
420C:					
Canton---------------	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
420D:					
Canton---------------	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
422B:					
Canton---------------	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
422C:					
Canton---------------	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon- ate
	Inches	meq/100 g	meq/100 g	pH	Pct
422D:					
Canton	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
424B:					
Canton	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
424C:					
Canton	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
424D:					
Canton	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
600:					
Pits, gravel	---	---	---	---	---
601:					
Pits, quarry	---	---	---	---	---
602:					
Urban land	---	---	---	---	---
603:					
Urban land	---	---	---	---	---
621B:					
Scio	0-8	---	1.5-9.9	4.5-5.5	0
	8-35	2.0-12	---	5.1-6.0	0
	35-65	1.2-11	---	5.1-6.0	0-1
Urban land	---	---	---	---	---
622C:					
Paxton	0-7	---	1.9-9.1	4.5-6.0	0
	7-13	---	1.6-7.8	4.5-6.0	0
	13-22	---	1.6-7.8	4.5-6.0	0
	22-26	1.6-9.3	---	4.5-6.0	0
	26-65	1.6-9.3	---	4.5-6.0	0
Urban land	---	---	---	---	---
623C:					
Woodbridge	0-2	---	---	4.5-5.0	0
	2-4	---	1.9-9.6	4.5-6.0	0
	4-30	---	1.6-7.8	4.5-6.0	0
	30-65	---	0.5-7.0	4.5-6.0	0
Urban land	---	---	---	---	---
624B:					
Haven	0-2	---	2.5-12	4.5-6.0	0
	2-20	---	2.1-9.8	4.5-6.0	0
	20-32	---	1.3-9.8	4.5-6.0	0
	32-65	---	0.1-3.3	4.5-6.0	0
Urban land	---	---	---	---	---

Table 16.—Chemical Soil Properties—continued

Map symbol and soil name	Depth	Cation exchange capacity	Effective cation exchange capacity	Soil reaction	Calcium carbon-ate
	Inches	meq/100 g	meq/100 g	pH	Pct
626B:					
Merrimac	0-9	---	1.0-6.8	3.5-6.0	0
	9-18	---	0.5-4.3	3.5-6.0	0
	18-26	0.7-3.1	---	3.5-6.0	0
	26-33	0.0-2.8	---	3.5-6.0	0
	33-65	0.0-2.8	---	3.5-6.0	0
Urban land	---	---	---	---	---
627C:					
Newport	0-8	---	2.2-8.7	4.5-6.0	0
	8-18	---	1.6-7.1	4.5-6.0	0
	18-24	1.6-8.1	---	4.5-6.0	0
	24-65	1.6-8.1	---	4.5-6.0	0
Urban land	---	---	---	---	---
629C:					
Canton	0-8	---	0.5-7.7	3.5-6.0	0
	8-21	---	0.2-5.6	3.5-6.0	0
	21-65	0.0-4.7	---	3.5-6.0	0
Charlton	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
Urban land	---	---	---	---	---
631C:					
Charlton	0-5	---	1.9-7.3	4.5-6.0	0
	5-22	---	0.5-5.6	4.5-6.0	0
	22-65	---	0.3-4.6	4.5-6.0	0
Urban land	---	---	---	---	---
Hollis	0-2	---	1.9-8.2	4.5-6.0	0
	2-14	---	1.9-8.2	4.5-6.0	0
	14-18	---	---	---	0
652:					
Udorthents, refuse substratum	---	---	---	---	---
653:					
Udorthents, sandy	---	---	---	---	---
654:					
Udorthents, loamy	---	---	---	---	---
655:					
Udorthents, wet substratum	---	---	---	---	---
656:					
Udorthents	---	---	---	---	---
Urban land	---	---	---	---	---

Table 17.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
1:							
Water	---	---	---	---	---	---	---
2A:							
Pootatuck	---	---	---	---	Moderate	Moderate	Moderate
4A:							
Rippowam	---	---	---	---	High	High	High
6A:							
Scarboro	---	---	---	---	Moderate	Moderate	High
8A:							
Limerick	---	---	---	---	High	High	Low
30B:							
Raynham	---	---	---	---	High	High	Moderate
32B:							
Wareham	---	---	---	---	Moderate	Moderate	High
33B:							
Raypol	---	---	---	---	High	Moderate	Moderate
36A:							
Saco	---	---	---	---	High	Low	Moderate
44A:							
Birdsall	---	---	---	---	High	High	High
51A:							
Swansea	---	---	---	---	High	High	High
52A:							
Freetown	---	---	---	---	High	High	High
53A:							
Freetown, ponded	---	---	---	---	High	High	High
71B:							
Ridgebury	Dense material	10-30	---	Very strongly cemented	High	High	High

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
73B:							
Whitman	Dense material	12-20	---	Very strongly cemented	High	Moderate	High
97A:							
Suncook	---	---	---	---	Low	Low	High
98A:							
Winooski	---	---	---	---	High	Moderate	Moderate
99A:							
Occum	---	---	---	---	Moderate	Low	Moderate
103B:							
Charlton	---	---	---	---	Moderate	Low	Moderate
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
Rock outcrop	Lithic bedrock	0-0	---	---	---	---	---
103C:							
Charlton	---	---	---	---	Moderate	Low	Moderate
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
Rock outcrop	Lithic bedrock	0-0	---	---	---	---	---
103D:							
Charlton	---	---	---	---	Moderate	Low	Moderate
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
Rock outcrop	Lithic bedrock	0-0	---	---	---	---	---
104C:							
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
Rock outcrop	Lithic bedrock	0-0	---	---	---	---	---
Charlton	---	---	---	---	Moderate	Low	Moderate
104D:							
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
Rock outcrop	Lithic bedrock	0-0	---	---	---	---	---
Charlton	---	---	---	---	Moderate	Low	Moderate

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
105E:							
Rock outcrop	Lithic bedrock	0-0	---	Indurated	---	---	---
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
106C:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
Rock outcrop	Lithic bedrock	0-0	---	---	---	---	---
106D:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
Rock outcrop	Lithic bedrock	0-0	---	---	---	---	---
223A:							
Scio	---	---	---	---	High	Moderate	Moderate
223B:							
Scio	---	---	---	---	High	Moderate	Moderate
251A:							
Haven	---	---	---	---	Moderate	Low	Moderate
251B:							
Haven	---	---	---	---	Moderate	Low	Moderate
253A:							
Hinckley	---	---	---	---	Low	Low	High
253B:							
Hinckley	---	---	---	---	Low	Low	High
253C:							
Hinckley	---	---	---	---	Low	Low	High
253D:							
Hinckley	---	---	---	---	Low	Low	High
253E:							
Hinckley	---	---	---	---	Low	Low	High

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
254A:							
Merrimac	---	---	---	---	Moderate	Low	High
254B:							
Merrimac	---	---	---	---	Moderate	Low	High
254C:							
Merrimac	---	---	---	---	Moderate	Low	High
255A:							
Windsor	---	---	---	---	Low	Low	High
255B:							
Windsor	---	---	---	---	Low	Low	High
255C:							
Windsor	---	---	---	---	Low	Low	High
256A:							
Deerfield	---	---	---	---	Moderate	Low	High
256B:							
Deerfield	---	---	---	---	Moderate	Low	High
259A:							
Carver	---	---	---	---	Low	Low	High
259B:							
Carver	---	---	---	---	Low	Low	High
259C:							
Carver	---	---	---	---	Low	Low	High
260B:							
Sudbury	---	---	---	---	Moderate	Low	High
261A:							
Tisbury	---	---	---	---	High	Low	Moderate
261B:							
Tisbury	---	---	---	---	High	Low	Moderate
262B:							
Quonset	---	---	---	---	Low	Low	High
262C:							
Quonset	---	---	---	---	Low	Low	High

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
262D: Quonset	---	---	---	---	Low	Low	High
262E: Quonset	---	---	---	---	Low	Low	High
300B: Montauk	Dense material	20-37	---	Strongly cemented	Moderate	Low	High
300C: Montauk	Dense material	20-37	---	Strongly cemented	Moderate	Low	High
300D: Montauk	Dense material	20-37	---	Strongly cemented	Moderate	Low	High
302B: Montauk	Dense material	20-37	---	Strongly cemented	Moderate	Low	High
302C: Montauk	Dense material	20-37	---	Strongly cemented	Moderate	Low	High
302D: Montauk	Dense material	20-37	---	Strongly cemented	Moderate	Low	High
305B: Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
305C: Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
305D: Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
305E: Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
307B: Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
307C: Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
307D:							
Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
307E:							
Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
310A:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
310B:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
310C:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
311B:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
311C:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
312B:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
312C:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
315B:							
Scituate	Dense material	18-33	---	Very strongly cemented	Moderate	Low	High
315C:							
Scituate	Dense material	18-33	---	Very strongly cemented	Moderate	Low	High
317B:							
Scituate	Dense material	18-33	---	Very strongly cemented	Moderate	Low	High
317C:							
Scituate	Dense material	18-33	---	Very strongly cemented	Moderate	Low	High
320B:							
Birchwood	Dense material	20-39	---	Very strongly cemented	Moderate	Low	High

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
325D:							
Newport	Dense material	20-39	---	Strongly cemented	Moderate	Low	Moderate
330B:							
Bernardston	Dense material	20-30	---	Strongly cemented	Moderate	Low	High
330C:							
Bernardston	Dense material	20-30	---	Strongly cemented	Moderate	Low	High
330D:							
Bernardston	Dense material	20-30	---	Strongly cemented	Moderate	Low	High
330E:							
Bernardston	Dense material	20-30	---	Strongly cemented	Moderate	Low	High
335B:							
Rainbow	Dense material	20-39	---	Strongly cemented	High	Moderate	Moderate
336B:							
Rainbow	Dense material	20-39	---	Strongly cemented	High	Moderate	Moderate
340B:							
Broadbrook	Dense material	18-39	---	Strongly cemented	Moderate	Low	Moderate
340D:							
Broadbrook	Dense material	18-39	---	Strongly cemented	Moderate	Low	Moderate
341B:							
Broadbrook	Dense material	18-39	---	Strongly cemented	Moderate	Low	Moderate
341C:							
Broadbrook	Dense material	18-39	---	Strongly cemented	Moderate	Low	Moderate
341D:							
Broadbrook	Dense material	18-39	---	Strongly cemented	Moderate	Low	Moderate
345A:							
Pittstown	Dense material	15-30	---	Very strongly cemented	Moderate	Moderate	High
345B:							
Pittstown	Dense material	15-30	---	Very strongly cemented	Moderate	Moderate	High
405B:							
Charlton	---	---	---	---	Moderate	Low	Moderate

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
405C:							
Charlton	---	---	---	---	Moderate	Low	Moderate
407B:							
Charlton	---	---	---	---	Moderate	Low	Moderate
407C:							
Charlton	---	---	---	---	Moderate	Low	Moderate
407D:							
Charlton	---	---	---	---	Moderate	Low	Moderate
415B:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
415C:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
415D:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
416B:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
416C:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
416D:							
Narragansett	---	---	---	---	Moderate	Low	Moderate
420B:							
Canton	---	---	---	---	Moderate	Low	Moderate
420C:							
Canton	---	---	---	---	Moderate	Low	Moderate
420D:							
Canton	---	---	---	---	Moderate	Low	Moderate
422B:							
Canton	---	---	---	---	Moderate	Low	Moderate
422C:							
Canton	---	---	---	---	Moderate	Low	Moderate
422D:							
Canton	---	---	---	---	Moderate	Low	Moderate

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
424B:							
Canton	---	---	---	---	Moderate	Low	Moderate
424C:							
Canton	---	---	---	---	Moderate	Low	Moderate
424D:							
Canton	---	---	---	---	Moderate	Low	Moderate
600:							
Pits, gravel	---	---	---	---	---	---	---
601:							
Pits, quarry	---	---	---	---	---	---	---
602:							
Urban land	---	---	---	---	---	---	---
603:							
Urban land	---	---	---	---	---	---	---
621B:							
Scio	---	---	---	---	High	Moderate	Moderate
Urban land	---	---	---	---	---	---	---
622C:							
Paxton	Dense material	20-39	---	Very strongly cemented	Moderate	Low	Moderate
Urban land	---	---	---	---	---	---	---
623C:							
Woodbridge	Dense material	18-39	---	Strongly cemented	Moderate	Moderate	Moderate
Urban land	---	---	---	---	---	---	---
624B:							
Haven	---	---	---	---	Moderate	Low	Moderate
Urban land	---	---	---	---	---	---	---
626B:							
Merrimac	---	---	---	---	Moderate	Low	High
Urban land	---	---	---	---	---	---	---

Table 17.—Soil Features—continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
627C:							
Newport	Dense material	20-39	---	Strongly cemented	Moderate	Low	Moderate
Urban land	---	---	---	---	---	---	---
629C:							
Canton	---	---	---	---	Moderate	Low	Moderate
Charlton	---	---	---	---	Moderate	Low	Moderate
Urban land	---	---	---	---	---	---	---
631C:							
Charlton	---	---	---	---	Moderate	Low	Moderate
Urban land	---	---	---	---	---	---	---
Hollis	Lithic bedrock	8-20	---	Indurated	Moderate	Low	High
652:							
Udorthents, refuse substratum	---	---	---	---	---	---	---
653:							
Udorthents, sandy	---	---	---	---	---	---	---
654:							
Udorthents, loamy	---	---	---	---	---	---	---
655:							
Udorthents, wet substratum	---	---	---	---	---	---	---
656:							
Udorthents	---	---	---	---	---	---	---
Urban land	---	---	---	---	---	---	---

Table 18.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
1:									
Water	---								
		Jan-Dec	---	---	---	---	None	---	---
2A:									
Pootatuck	B								
		January	1.5-2.5	>6.0	---	---	None	Brief	Occasional
		February	1.5-2.5	>6.0	---	---	None	Brief	Occasional
		March	1.5-2.5	>6.0	---	---	None	Brief	Occasional
		April	1.5-2.5	>6.0	---	---	None	Brief	Occasional
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.5	>6.0	---	---	None	Brief	Occasional
		December	1.5-2.5	>6.0	---	---	None	Brief	Occasional
4A:									
Rippowam	C								
		January	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		February	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		March	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		April	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		May	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		June	0.5-1.5	>6.0	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	0.5-1.5	>6.0	---	---	None	---	None
		October	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		November	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		December	0.5-1.5	>6.0	---	---	None	Brief	Frequent
6A:									
Scarboro	D								
		January	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		June	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
6A:									
Scarboro		July	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		August	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		September	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
8A:									
Limerick	C								
		January	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		February	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		March	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		April	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		May	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	Brief	Frequent
		December	0.5-1.5	>6.0	---	---	None	Brief	Frequent
30B:									
Raynham	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
32B:									
Wareham	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
32B:									
Wareham		June	0.5-1.5	>6.0	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	0.5-1.5	>6.0	---	---	None	---	None
		October	0.5-1.5	>6.0	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
33B:									
Raypol	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
36A:									
Saco	D								
		January	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		February	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		March	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		April	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		May	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		June	0.0-0.5	>6.0	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	0.0-0.5	>6.0	---	---	None	---	None
		October	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		November	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		December	0.0-0.5	>6.0	---	---	None	Brief	Frequent
44A:									
Birdsall	D								
		January	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
44A:									
Birdsall------------------		June	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		July	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		August	---	---	---	---	---	---	None
		September	---	---	---	---	---	---	None
		October	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
51A:									
Swansea-------------------	D								
		January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		July	0.0-0.5	>6.0	---	---	None	---	None
		August	0.0-0.5	>6.0	---	---	None	---	None
		September	0.0-0.5	>6.0	---	---	None	---	None
		October	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
52A:									
Freetown------------------	D								
		January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		July	0.0-0.5	>6.0	---	---	None	---	None
		August	0.0-0.5	>6.0	---	---	None	---	None
		September	0.0-0.5	>6.0	---	---	None	---	None
		October	0.0-0.5	>6.0	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
53A:									
Freetown, ponded----------	D								
		January	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		February	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
53A:									
Freetown, ponded		June	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		July	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		August	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		September	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		October	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		November	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
		December	0.0-0.5	>6.0	0.0-3.0	Very long	Frequent	---	None
71B:									
Ridgebury	C								
		January	0.5-1.0	1.0-1.5	---	---	None	---	None
		February	0.5-1.0	1.0-1.5	---	---	None	---	None
		March	0.5-1.0	1.0-1.5	---	---	None	---	None
		April	0.5-1.0	1.0-1.5	---	---	None	---	None
		May	0.5-1.0	1.0-1.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.0	1.0-1.5	---	---	None	---	None
		December	0.5-1.0	1.0-1.5	---	---	None	---	None
73B:									
Whitman	D								
		January	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		February	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		June	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		July	---	---	---	---	---	---	None
		August	---	---	---	---	---	---	None
		September	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		October	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		November	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
		December	0.0-0.5	>6.0	0.0-1.0	Long	Frequent	---	None
97A:									
Suncook	A								
		January	4.0-6.0	>6.0	---	---	None	---	None
		February	4.0-6.0	>6.0	---	---	None	---	None
		March	4.0-6.0	>6.0	---	---	None	Brief	Frequent
		April	4.0-6.0	>6.0	---	---	None	Brief	Frequent
		May	---	---	---	---	None	Brief	Frequent

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
97A:									
Suncook-------------------		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
98A:									
Winooski------------------	B								
		January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	Brief	Frequent
		March	1.5-3.0	>6.0	---	---	None	Brief	Frequent
		April	1.5-3.0	>6.0	---	---	None	Brief	Frequent
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-3.0	>6.0	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None
99A:									
Occum---------------------	B								
		January	4.0-6.0	>6.0	---	---	None	---	None
		February	4.0-6.0	>6.0	---	---	None	Brief	Frequent
		March	4.0-6.0	>6.0	---	---	None	Brief	Frequent
		April	4.0-6.0	>6.0	---	---	None	Brief	Frequent
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	4.0-6.0	>6.0	---	---	None	---	None
		December	4.0-6.0	>6.0	---	---	None	---	None
103B:									
Charlton------------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
103B:									
Charlton		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Hollis	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	---
103C:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Hollis	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Hollis		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	---
103D:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Hollis	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	---
104C:									
Hollis	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
104C:									
Hollis		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	---
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
104D:									
Hollis	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	---

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
105E:									
Rock outcrop	D								
		Jan-Dec	---	---	---	---	None	---	---
Hollis	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
106C:									
Narragansett	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Hollis--------------------	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Rock outcrop--------------	D								
		Jan-Dec	---	---	---	---	None	---	---
106D:									
Narragansett--------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Hollis--------------------	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Rock outcrop--------------	D								
		Jan-Dec	---	---	---	---	None	---	---

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
223A:									
Scio	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
223B:									
Scio	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
251A:									
Haven	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
251B:									
Haven	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
253A:									
Hinckley	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
253B:									
Hinckley	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
253C:									
Hinckley	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
253D:									
Hinckley	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
253E:									
Hinckley	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
254A:									
Merrimac	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
254B:									
Merrimac	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
254C:									
Merrimac	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
255A:									
Windsor	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
255B:									
Windsor	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
255C:									
Windsor	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
256A:									
Deerfield	B								
		January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	---	None
		March	1.5-3.0	>6.0	---	---	None	---	None
		April	1.5-3.0	>6.0	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None
256B:									
Deerfield	B								
		January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	---	None
		March	1.5-3.0	>6.0	---	---	None	---	None
		April	1.5-3.0	>6.0	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None
259A:									
Carver	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
259B:									
Carver	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
259C:									
Carver	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
260B:									
Sudbury	B								
		January	1.5-3.0	>6.0	---	---	None	---	None
		February	1.5-3.0	>6.0	---	---	None	---	None
		March	1.5-3.0	>6.0	---	---	None	---	None
		April	1.5-3.0	>6.0	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	1.5-3.0	>6.0	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
261A:									
Tisbury-------------------	B								
		January	1.5-2.5	>6.0	---	---	None	---	None
		February	1.5-2.5	>6.0	---	---	None	---	None
		March	1.5-2.5	>6.0	---	---	None	---	None
		April	1.5-2.5	>6.0	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.5	>6.0	---	---	None	---	None
		December	1.5-2.5	>6.0	---	---	None	---	None
261B:									
Tisbury-------------------	B								
		January	1.5-2.5	>6.0	---	---	None	---	None
		February	1.5-2.5	>6.0	---	---	None	---	None
		March	1.5-2.5	>6.0	---	---	None	---	None
		April	1.5-2.5	>6.0	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.5	>6.0	---	---	None	---	None
		December	1.5-2.5	>6.0	---	---	None	---	None
262B:									
Quonset-------------------	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
262C:									
Quonset	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
262D:									
Quonset	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
262E:									
Quonset	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
300B:									
Montauk-------------------	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
300C:									
Montauk-------------------	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
300D:									
Montauk-------------------	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
302B:									
Montauk-------------------	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
302C:									
Montauk-------------------	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
302D:									
Montauk-------------------	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
305B:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
305C:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
305D:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
305E:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
307B:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
307C:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
307D:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
307E:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
310A:									
Woodbridge	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
310B:									
Woodbridge----------------	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None
310C:									
Woodbridge----------------	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None
311B:									
Woodbridge----------------	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
311C:									
Woodbridge	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None
312B:									
Woodbridge	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None
312C:									
Woodbridge	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None

Table 18.—Water Features—continued

			Water table		Ponding			Flooding	
Map symbol and soil name	Hydrologic group	Month	Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
315B:									
Scituate------------------	C								
		January	1.5-2.0	2.0-2.5	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	2.0-2.5	---	---	None	---	None
		December	1.5-2.0	2.0-2.5	---	---	None	---	None
315C:									
Scituate------------------	C								
		January	1.5-2.0	2.0-2.5	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	2.0-2.5	---	---	None	---	None
		December	1.5-2.0	2.0-2.5	---	---	None	---	None
317B:									
Scituate------------------	C								
		January	1.5-2.0	2.0-2.5	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	2.0-2.5	---	---	None	---	None
		December	1.5-2.0	2.0-2.5	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
317C:									
Scituate------------------	C								
		January	1.5-2.0	2.0-2.5	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	1.5-2.0	2.0-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	2.0-2.5	---	---	None	---	None
		December	1.5-2.0	2.0-2.5	---	---	None	---	None
320B:									
Birchwood-----------------	C								
		January	1.5-2.0	2.0-2.5	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	2.0-2.5	---	---	None	---	None
		December	1.5-2.0	2.0-2.5	---	---	None	---	None
325D:									
Newport-------------------	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
330B:									
Bernardston	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
330C:									
Bernardston	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
330D:									
Bernardston	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
330E:									
Bernardston	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
335B:									
Rainbow	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None
336B:									
Rainbow	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
340B:									
Broadbrook	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
340D:									
Broadbrook	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
341B:									
Broadbrook	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
341C:									
Broadbrook	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
341D:									
Broadbrook	C								
		January	---	---	---	---	None	---	None
		February	1.5-2.0	2.0-2.5	---	---	None	---	None
		March	1.5-2.0	2.0-2.5	---	---	None	---	None
		April	1.5-2.0	2.0-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
345A:									
Pittstown	C								
		January	1.5-3.0	3.0-3.9	---	---	None	---	None
		February	1.5-3.0	3.0-3.9	---	---	None	---	None
		March	1.5-3.0	3.0-3.9	---	---	None	---	None
		April	1.5-3.0	3.0-3.9	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-3.0	3.0-3.9	---	---	None	---	None
		December	1.5-3.0	3.0-3.9	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
345B:									
Pittstown	C								
		January	1.5-3.0	3.0-3.9	---	---	None	---	None
		February	1.5-3.0	3.0-3.9	---	---	None	---	None
		March	1.5-3.0	3.0-3.9	---	---	None	---	None
		April	1.5-3.0	3.0-3.9	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-3.0	3.0-3.9	---	---	None	---	None
		December	1.5-3.0	3.0-3.9	---	---	None	---	None
405B:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
405C:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
407B:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
407C:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
407D:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
415B:									
Narragansett	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
415C:									
Narragansett	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
415D:									
Narragansett	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
416B:									
Narragansett	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
416C:									
Narragansett	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
416D:									
Narragansett	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
420B:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
420C:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
420D:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
422B:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
422C:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
422D:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
424B:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
424C:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
424D:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
600:									
Pits, gravel	A								
		Jan-Dec	---	---	---	---	None	---	None
601:									
Pits, quarry	---								
		Jan-Dec	---	---	---	---	None	---	None
602:									
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None
603:									
Urban land	---								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
621B:									
Scio	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
622C:									
Paxton	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None
623C:									
Woodbridge	C								
		January	1.5-1.8	1.8-2.5	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	1.5-1.8	1.8-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-1.8	1.8-2.5	---	---	None	---	None
		December	1.5-1.8	1.8-2.5	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None
624B:									
Haven	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
624B:									
Haven		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None
626B:									
Merrimac	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None
627C:									
Newport	C								
		January	---	---	---	---	None	---	None
		February	1.5-1.8	1.8-2.5	---	---	None	---	None
		March	1.5-1.8	1.8-2.5	---	---	None	---	None
		April	1.5-1.8	1.8-2.5	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None
629C:									
Canton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
629C:									
Canton		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None
631C:									
Charlton	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
Hollis	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
652:									
Udorthents, refuse substratum	---								
		Jan-Dec	---	---	---	---	None	---	None
653:									
Udorthents, sandy	---								
		Jan-Dec	---	---	---	---	None	---	None
654:									
Udorthents, loamy	---								
		Jan-Dec	---	---	---	---	None	---	None
655:									
Udorthents, wet substratum	---								
		Jan-Dec	---	---	---	---	None	---	None
656:									
Udorthents	---								
		Jan-Dec	---	---	---	---	None	---	None
Urban land	---								
		Jan-Dec	---	---	---	---	None	---	None

Table 19.—Hydric Soils

[This report lists all map unit components for the survey area. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
2A: Pootatuck fine sandy loam, 0 to 3 percent slopes	Pootatuck	80	Flood plains	No	---
	Occum	10	Terraces	No	---
	Rippowam	10	Alluvial flats	Yes	2B3
4A: Rippowam fine sandy loam, 0 to 3 percent slopes	Rippowam	80	Alluvial flats	Yes	2B3
	Saco	10	Alluvial flats, terraces	Yes	2B3
	Limerick	5	Alluvial flats, terraces	Yes	2B3
	Pootatuck	5	Flood plains	No	---
6A: Scarboro mucky fine sandy loam, 0 to 3 percent slopes	Scarboro	90	Terraces	Yes	2B3, 3
	Wareham	4	Deltas, depressions, terraces	Yes	2B2
	Birdsall	2	Depressions, flats	Yes	3, 2B3
	Raypol	2	Depressions, terraces	Yes	2B3
	Swansea	2	Bogs, depressions	Yes	1
8A: Limerick silt loam, 0 to 3 percent slopes	Limerick	90	Alluvial flats, terraces	Yes	2B3
	Saco	8	Alluvial flats, terraces	Yes	2B3
	Rippowam	2	Alluvial flats	Yes	2B3
30B: Raynham silt loam, 0 to 5 percent slopes	Raynham	80	Depressions	Yes	2B3
	Birdsall	10	Depressions, flats	Yes	3, 2B3
	Raypol	5	Depressions, terraces	Yes	2B3
	Wareham	5	Deltas, depressions, terraces	Yes	2B2

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
32B: Wareham loamy fine sand, 0 to 5 percent slopes	Wareham	80	Deltas, depressions, terraces	Yes	2B2
	Sudbury	10	Plains, terraces	No	---
	Deerfield	5	Deltas, depressions, stream terraces	No	---
	Scarboro	5	Terraces	Yes	2B3, 3
33B: Raypol silt loam, 0 to 5 percent slopes	Raypol	80	Depressions, terraces	Yes	2B3
	Raynham	8	Depressions	Yes	2B3
	Wareham	8	Deltas, depressions, terraces	Yes	2B2
	Birdsall	2	Depressions, flats	Yes	2B3, 3
	Tisbury	2	Plains, terraces	No	---
36A: Saco mucky silt loam, 0 to 1 percent slopes	Saco	80	Alluvial flats, terraces	Yes	2B3
	Freetown	8	Bogs, depressions	Yes	1
	Swansea	8	Bogs, depressions	Yes	1
	Limerick	4	Alluvial flats, terraces	Yes	2B3
44A: Birdsall mucky silt loam, 0 to 1 percent slopes	Birdsall	90	Depressions, flats	Yes	3, 2B3
	Wareham	4	Deltas, depressions, terraces	Yes	2B2
	Raypol	2	Depressions, terraces	Yes	2B3
	Scarboro	2	Terraces	Yes	3, 2B3
	Swansea	2	Bogs, depressions	Yes	1
51A: Swansea muck, 0 to 1 percent slopes	Swansea	85	Bogs, depressions	Yes	1
	Freetown	5	Bogs, depressions	Yes	1

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
51A: Swansea muck, 0 to 1 percent slopes	Saco	5	Alluvial flats, terraces	Yes	2B3
	Scarboro	3	Terraces	Yes	3, 2B3
	Birdsall	2	Depressions, flats	Yes	2B3, 3
52A: Freetown muck, 0 to 1 percent slopes	Freetown	85	Bogs, depressions	Yes	1
	Freetown, ponded	5	Bogs, depressions	Yes	1, 3
	Scarboro	5	Terraces	Yes	3, 2B3
	Swansea	5	Bogs, depressions	Yes	1
53A: Freetown muck, ponded, 0 to 1 percent slopes	Freetown, ponded	90	Bogs, depressions	Yes	1, 3
	Freetown	5	Bogs, depressions	Yes	1
	Swansea	3	Bogs, depressions	Yes	1
	Scarboro	2	Terraces	Yes	3, 2B3
71B: Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony	Ridgebury	85	Depressions, drainageways	Yes	2B3
	Scituate	5	Depressions, hillslopes	No	---
	Whitman	5	Depressions, drainageways	Yes	2B3, 3
	Woodbridge	5	Hillslopes	No	---
73B: Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony	Whitman	80	Depressions, drainageways	Yes	3, 2B3
	Ridgebury	10	Depressions, drainageways	Yes	2B3
	Woodbridge	7	Hillslopes	No	---
	Birdsall	3	Depressions, flats	Yes	2B3, 3
97A: Suncook loamy sand, 0 to 3 percent slopes	Suncook	90	Flood plains, terraces	No	---
	Occum	8	Terraces	No	---
	Windsor	2	Deltas, flats, terraces	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
98A: Winooski very fine sandy loam, 0 to 3 percent slopes	Winooski	80	Flood plains	No	---
	Limerick	10	Alluvial flats, terraces	Yes	2B3
	Pootatuck	10	Flood plains	No	---
99A: Occum very fine sandy loam, 0 to 3 percent slopes	Occum	80	Terraces	No	---
	Suncook	12	Flood plains, terraces	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Unnamed	3	---	Unranked	---
103B: Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	Charlton	50	Drumlins, ground moraines	No	---
	Hollis	25	Hills, ridges	No	---
	Rock outcrop	15	---	Unranked	---
	Canton	2	Hills	No	---
	Narragansett	2	Hills, ridges	No	---
	Scituate	2	Depressions, hillslopes	No	---
	Woodbridge	2	Hillslopes	No	---
	Montauk	1	Hillslopes	No	---
	Unnamed	1	---	Unranked	---
103C: Charlton-Hollis-Rock outcrop complex, 8 to 15 percent slopes	Charlton	50	Drumlins, ground moraines	No	---
	Hollis	25	Hills, ridges	No	---
	Rock outcrop	15	---	Unranked	---
	Canton	2	Hills	No	---
	Narragansett	2	Hills, ridges	No	---
	Scituate	2	Depressions, hillslopes	No	---
	Woodbridge	2	Hillslopes	No	---
	Montauk	1	Hillslopes	No	---
	Unnamed	1	---	Unranked	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
103D: Charlton-Hollis-Rock outcrop complex, 15 to 25 percent slopes	Charlton	50	Drumlins, ground moraines	No	---
	Hollis	25	Hills, ridges	No	---
	Rock outcrop	15	---	Unranked	---
	Canton	2	Hills	No	---
	Montauk	2	Hillslopes	No	---
	Narragansett	2	Hills, ridges	No	---
	Unnamed	2	---	Unranked	---
	Woodbridge	2	Hillslopes	No	---
104C: Hollis-Rock outcrop-Charlton complex, 3 to 15 percent slopes	Hollis	30	Hills, ridges	No	---
	Rock outcrop	30	---	Unranked	---
	Charlton	25	Hills, swales	No	---
	Canton	10	Hills	No	---
	Scituate	3	Depressions, hillslopes	No	---
	Montauk	1	Hillslopes	No	---
	Unnamed	1	---	Unranked	---
104D: Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	Hollis	30	Hills, ridges	No	---
	Rock outcrop	30	---	Unranked	---
	Charlton	25	Hills	No	---
	Canton	10	Hills	No	---
	Montauk	3	Hillslopes	No	---
	Unnamed	2	---	Unranked	---
105E: Rock outcrop-Hollis complex, 3 to 35 percent slopes	Rock outcrop	50	---	Unranked	---
	Hollis	45	Hills, ridges	No	---
	Whitman	3	Depressions, drainageways	Yes	3, 2B3
	Swansea	1	Bogs, depressions	Yes	1
	Unnamed	1	---	Unranked	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
106C: Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes	Narragansett	45	Hills, ridges	No	---
	Hollis	20	Hills, ridges	No	---
	Rock outcrop	10	---	Unranked	---
	Canton	9	Hills	No	---
	Charlton	6	Hills, swales	No	---
	Scituate	5	Depressions, hillslopes	No	---
	Unnamed	5	---	Unranked	---
106D: Narragansett-Hollis-Rock outcrop complex, 15 to 25 percent slopes	Narragansett	45	Hills, ridges	No	---
	Hollis	20	Hills, ridges	No	---
	Rock outcrop	10	---	Unranked	---
	Unnamed	9	---	Unranked	---
	Canton	8	Hills	No	---
	Charlton	8	Hills, swales	No	---
223A: Scio very fine sandy loam, 0 to 3 percent slopes	Scio	80	Depressions, terraces	No	---
	Haven	10	Plains, terraces	No	---
	Sudbury	5	Plains, terraces	No	---
	Tisbury	5	Plains, terraces	No	---
223B: Scio very fine sandy loam, 3 to 8 percent slopes	Scio	80	Depressions, terraces	No	---
	Haven	10	Plains, terraces	No	---
	Sudbury	5	Plains, terraces	No	---
	Tisbury	5	Plains, terraces	No	---
251A: Haven silt loam, 0 to 3 percent slopes	Haven	85	Plains, terraces	No	---
	Merrimac	9	Plains, terraces	No	---
	Scio	5	Depressions, terraces	No	---
	Unnamed	1	---	Unranked	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
251B: Haven silt loam, 3 to 8 percent slopes	Haven	85	Plains, terraces	No	---
	Merrimac	9	Plains, terraces	No	---
	Scio	5	Depressions, terraces	No	---
	Unnamed	1	---	Unranked	---
253A: Hinckley loamy sand, 0 to 3 percent slopes	Hinckley	80	Plains, terraces	No	---
	Merrimac	8	Plains, terraces	No	---
	Windsor	6	Deltas, flats, terraces	No	---
	Deerfield	2	Deltas, depressions, stream terraces	No	---
	Quonset	2	Eskers, kames, terraces	No	---
	Sudbury	2	Plains, terraces	No	---
253B: Hinckley loamy sand, 3 to 8 percent slopes	Hinckley	80	Plains, terraces	No	---
	Merrimac	7	Plains, terraces	No	---
	Windsor	5	Deltas, flats, terraces	No	---
	Carver	3	Deltas, plains, terraces	No	---
	Quonset	2	Eskers, kames, terraces	No	---
	Sudbury	2	Plains, terraces	No	---
	Deerfield	1	Deltas, depressions, stream terraces	No	---
253C: Hinckley loamy sand, 8 to 15 percent slopes	Hinckley	80	Eskers, ridges, terraces	No	---
	Windsor	7	Deltas, flats, terraces	No	---
	Merrimac	6	Plains, terraces	No	---
	Canton	2	Hills	No	---
	Carver	2	Deltas, plains, terraces	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
253C: Hinckley loamy sand, 8 to 15 percent slopes	Quonset	2	Eskers, kames, terraces	No	---
	Sudbury	1	Plains, terraces	No	---
253D: Hinckley loamy sand, 15 to 25 percent slopes	Hinckley	70	Escarpments, eskers, kames, terraces	No	---
	Windsor	15	Deltas, flats, terraces	No	---
	Merrimac	10	Plains, terraces	No	---
	Carver	3	Deltas, plains, terraces	No	---
	Quonset	2	Eskers, kames, terraces	No	---
253E: Hinckley loamy sand, 25 to 35 percent slopes	Hinckley	70	Escarpments, eskers, kames	No	---
	Windsor	15	Deltas, flats, terraces	No	---
	Carver	8	Deltas, plains, terraces	No	---
	Quonset	7	Eskers, kames, terraces	No	---
254A: Merrimac fine sandy loam, 0 to 3 percent slopes	Merrimac	80	Plains, terraces	No	---
	Sudbury	9	Plains, terraces	No	---
	Hinckley	5	Eskers, ridges, terraces	No	---
	Windsor	5	Deltas, flats, terraces	No	---
	Unnamed	1	---	Unranked	---
254B: Merrimac fine sandy loam, 3 to 8 percent slopes	Merrimac	85	Plains, terraces	No	---
	Sudbury	9	Plains, terraces	No	---
	Windsor	3	Deltas, flats, terraces	No	---
	Hinckley	2	Eskers, ridges, terraces	No	---
	Unnamed	1	---	Unranked	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
255A: Windsor loamy sand, 0 to 3 percent slopes	Windsor	85	Deltas, flats, terraces	No	---
	Deerfield	5	Deltas, depressions, stream terraces	No	---
	Merrimac	5	Plains, terraces	No	---
	Hinckley	3	Eskers, ridges, terraces	No	---
	Carver	2	Deltas, plains, terraces	No	---
255B: Windsor loamy sand, 3 to 8 percent slopes	Windsor	85	Deltas, flats, terraces	No	---
	Deerfield	5	Deltas, depressions, stream terraces	No	---
	Merrimac	5	Plains, terraces	No	---
	Hinckley	3	Eskers, ridges, terraces	No	---
	Carver	2	Deltas, plains, terraces	No	---
255C: Windsor loamy sand, 8 to 15 percent slopes	Windsor	85	Deltas, terraces	No	---
	Hinckley	10	Eskers, ridges, terraces	No	---
	Carver	5	Deltas, plains, terraces	No	---
256A: Deerfield loamy sand, 0 to 3 percent slopes	Deerfield	90	Deltas, depressions, stream terraces	No	---
	Sudbury	7	Plains, terraces	No	---
	Wareham	3	Deltas, depressions, terraces	Yes	2B2
256B: Deerfield loamy sand, 3 to 8 percent slopes	Deerfield	90	Deltas, depressions, stream terraces	No	---
	Sudbury	8	Plains, terraces	No	---
	Wareham	2	Deltas, depressions, terraces	Yes	2B2

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
259A: Carver loamy coarse sand, 0 to 3 percent slopes	Carver	85	Deltas, plains, terraces	No	---
	Windsor	8	Deltas, flats, terraces	No	---
	Hinckley	3	Eskers, ridges, terraces	No	---
	Deerfield	2	Deltas, depressions, stream terraces	No	---
	Quonset	2	Eskers, kames, terraces	No	---
259B: Carver loamy coarse sand, 3 to 8 percent slopes	Carver	85	Deltas, plains, terraces	No	---
	Windsor	8	Deltas, flats, terraces	No	---
	Hinckley	3	Eskers, ridges, terraces	No	---
	Deerfield	2	Deltas, depressions, stream terraces	No	---
	Quonset	2	Eskers, kames, terraces	No	---
259C: Carver loamy coarse sand, 8 to 15 percent slopes	Carver	85	Deltas, plains, terraces	No	---
	Hinckley	10	Eskers, ridges, terraces	No	---
	Quonset	5	Eskers, kames, terraces	No	---
260B: Sudbury fine sandy loam, 3 to 8 percent slopes	Sudbury	85	Plains, terraces	No	---
	Merrimac	8	Plains, terraces	No	---
	Wareham	4	Deltas, depressions, terraces	Yes	2B2
	Windsor	2	Deltas, flats, terraces	No	---
	Unnamed	1	---	Unranked	---
261A: Tisbury silt loam, 0 to 3 percent slopes	Tisbury	85	Plains, terraces	No	---
	Raypol	5	Depressions, terraces	Yes	2B3

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
261A: Tisbury silt loam, 0 to 3 percent slopes	Scio	5	Depressions, terraces	No	---
	Wareham	5	Deltas, depressions, terraces	Yes	2B2
261B: Tisbury silt loam, 3 to 8 percent slopes	Tisbury	85	Plains, terraces	No	---
	Raypol	7	Depressions, terraces	Yes	2B3
	Scio	6	Depressions, terraces	No	---
	Wareham	2	Deltas, depressions, terraces	Yes	2B2
262B: Quonset sandy loam, 3 to 8 percent slopes	Quonset	80	Eskers, kames, terraces	No	---
	Sudbury	10	Plains, terraces	No	---
	Canton	8	Hills	No	---
	Unnamed	2	---	Unranked	---
262C: Quonset sandy loam, 8 to 15 percent slopes	Quonset	80	Eskers, kames, terraces	No	---
	Hinckley	12	Eskers, ridges, terraces	No	---
	Canton	5	Hills	No	---
	Sudbury	2	Plains, terraces	No	---
	Unnamed	1	---	Unranked	---
262D: Quonset sandy loam, 15 to 25 percent slopes	Quonset	80	Eskers, kames, terraces	No	---
	Canton	10	Hills	No	---
	Hinckley	10	Eskers, ridges, terraces	No	---
262E: Quonset sandy loam, 25 to 35 percent slopes	Quonset	80	Hillslopes	No	---
	Canton	10	Hills	No	---
	Hinckley	10	Eskers, ridges, terraces	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
300B: Montauk fine sandy loam, 3 to 8 percent slopes	Montauk	85	Hillslopes	No	---
	Canton	5	Hills	No	---
	Paxton	5	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---
300C: Montauk fine sandy loam, 8 to 15 percent slopes	Montauk	85	Hillslopes	No	---
	Canton	7	Hills	No	---
	Paxton	5	Hillslopes	No	---
	Scituate	3	Depressions, hillslopes	No	---
300D: Montauk fine sandy loam, 15 to 25 percent slopes	Montauk	85	Hillslopes	No	---
	Paxton	10	Hillslopes	No	---
	Charlton	5	Hills, swales	No	---
302B: Montauk fine sandy loam, 3 to 8 percent slopes, extremely stony	Montauk	85	Hillslopes	No	---
	Scituate	10	Depressions, hillslopes	No	---
	Paxton	5	Hillslopes	No	---
302C: Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	Montauk	85	Hillslopes	No	---
	Paxton	13	Hillslopes	No	---
	Woodbridge	2	Hillslopes	No	---
302D: Montauk fine sandy loam, 15 to 25 percent slopes, extremely stony	Montauk	85	Hillslopes	No	---
	Paxton	10	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---
305B: Paxton fine sandy loam, 3 to 8 percent slopes	Paxton	85	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
305B: Paxton fine sandy loam, 3 to 8 percent slopes	Montauk	5	Hillslopes	No	---
	Woodbridge	3	Hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
305C: Paxton fine sandy loam, 8 to 15 percent slopes	Paxton	85	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---
	Woodbridge	5	Hillslopes	No	---
305D: Paxton fine sandy loam, 15 to 25 percent slopes	Paxton	85	Hillslopes	No	---
	Charlton	8	Drumlins, ground moraines	No	---
	Montauk	7	Hillslopes	No	---
305E: Paxton fine sandy loam, 25 to 35 percent slopes	Paxton	85	Hillslopes	No	---
	Charlton	8	Drumlins, ground moraines	No	---
	Montauk	7	Hillslopes	No	---
307B: Paxton fine sandy loam, 3 to 8 percent slopes, extremely stony	Paxton	85	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---
	Woodbridge	3	Hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
307C: Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony	Paxton	85	Hillslopes	No	---
	Montauk	7	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Woodbridge	3	Hillslopes	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
307D: Paxton fine sandy loam, 15 to 25 percent slopes, extremely stony	Paxton	85	Hillslopes	No	---
	Montauk	10	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---
307E: Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony	Paxton	85	Hillslopes	No	---
	Montauk	10	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---
310A: Woodbridge fine sandy loam, 0 to 3 percent slopes	Woodbridge	85	Hillslopes	No	---
	Paxton	5	Hillslopes	No	---
	Ridgebury	5	Depressions, drainageways	Yes	2B3
	Scituate	5	Depressions, hillslopes	No	---
310B: Woodbridge fine sandy loam, 3 to 8 percent slopes	Woodbridge	85	Hillslopes	No	---
	Paxton	8	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
310C: Woodbridge fine sandy loam, 8 to 15 percent slopes	Woodbridge	85	Hillslopes	No	---
	Paxton	10	Hillslopes	No	---
	Scituate	4	Depressions, hillslopes	No	---
	Ridgebury	1	Depressions, drainageways	Yes	2B3
311B: Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony	Woodbridge	85	Hillslopes	No	---
	Paxton	8	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
311C:					
Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony	Woodbridge	85	Hillslopes	No	---
	Paxton	9	Hillslopes	No	---
	Scituate	4	Depressions, hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
312B:					
Woodbridge fine sandy loam, 3 to 8 percent slopes, extremely stony	Woodbridge	85	Hillslopes	No	---
	Paxton	8	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
312C:					
Woodbridge fine sandy loam, 8 to 15 percent slopes, extremely stony	Woodbridge	85	Hillslopes	No	---
	Paxton	9	Hillslopes	No	---
	Scituate	4	Depressions, hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
315B:					
Scituate fine sandy loam, 3 to 8 percent slopes	Scituate	85	Depressions, hillslopes	No	---
	Montauk	5	Hillslopes	No	---
	Ridgebury	5	Depressions, drainageways	Yes	2B3
	Woodbridge	5	Hillslopes	No	---
315C:					
Scituate fine sandy loam, 8 to 15 percent slopes	Scituate	85	Hillslopes, swales	No	---
	Montauk	7	Hillslopes	No	---
	Woodbridge	5	Hillslopes	No	---
	Ridgebury	3	Depressions, drainageways	Yes	2B3
317B:					
Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony	Scituate	85	Depressions, hillslopes	No	---
	Montauk	5	Hillslopes	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
317B: Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony	Ridgebury	5	Depressions, drainageways	Yes	2B3
	Woodbridge	5	Hillslopes	No	---
317C: Scituate fine sandy loam, 8 to 15 percent slopes, extremely stony	Scituate	85	Hillslopes	No	---
	Montauk	8	Hillslopes	No	---
	Woodbridge	5	Hillslopes	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
320B: Birchwood fine sandy loam, 3 to 8 percent slopes	Birchwood	85	Drumlins	No	---
	Merrimac	10	Plains, terraces	No	---
	Sudbury	5	Plains, terraces	No	---
325D: Newport channery fine sandy loam, 8 to 25 percent slopes	Newport	80	Drumlins, ridges, till plains	No	---
	Paxton	5	Hillslopes	No	---
	Pittstown	5	Depressions, drumlins	No	---
	Udorthents	5	---	No	---
	Urban land	5	---	Unranked	---
330B: Bernardston very fine sandy loam, 3 to 8 percent slopes	Bernardston	85	Hillslopes	No	---
	Charlton	5	Depressions, drumlins	No	---
	Paxton	5	Hillslopes	No	---
	Pittstown	5	Depressions, drumlins	No	---
330C: Bernardston very fine sandy loam, 8 to 15 percent slopes	Bernardston	85	Hillslopes	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Paxton	5	Hillslopes	No	---
	Pittstown	5	Depressions, drumlins	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
330D: Bernardston very fine sandy loam, 15 to 25 percent slopes	Bernardston	85	Hillslopes	No	---
	Charlton	10	Drumlins, ground moraines	No	---
	Paxton	5	Hillslopes	No	---
330E: Bernardston very fine sandy loam, 25 to 35 percent slopes	Bernardston	85	Hillslopes	No	---
	Charlton	10	Drumlins, ground moraines	No	---
	Paxton	5	Hillslopes	No	---
335B: Rainbow silt loam, 3 to 8 percent slopes	Rainbow	90	Hillslopes	No	---
	Broadbrook	5	Hillslopes	No	---
	Paxton	3	Hillslopes	No	---
	Woodbridge	2	Hillslopes	No	---
336B: Rainbow silt loam, 3 to 8 percent slopes, very stony	Rainbow	90	Hillslopes	No	---
	Broadbrook	5	Hillslopes	No	---
	Paxton	3	Hillslopes	No	---
	Woodbridge	2	Hillslopes	No	---
340B: Broadbrook very fine sandy loam, 3 to 8 percent slopes	Broadbrook	85	Hillslopes	No	---
	Narragansett	5	Ground moraines	No	---
	Paxton	5	Hillslopes	No	---
	Rainbow	5	Hillslopes	No	---
340D: Broadbrook very fine sandy loam, 8 to 25 percent slopes	Broadbrook	85	Hillslopes	No	---
	Narragansett	7	Ground moraines	No	---
	Paxton	5	Hillslopes	No	---
	Rainbow	3	Hillslopes	No	---
341B: Broadbrook very fine sandy loam, 3 to 8 percent slopes, very stony	Broadbrook	85	Hillslopes	No	---
	Narragansett	5	Ground moraines	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
341B: Broadbrook very fine sandy loam, 3 to 8 percent slopes, very stony	Paxton	5	Hillslopes	No	---
	Rainbow	5	Hillslopes	No	---
341C: Broadbrook very fine sandy loam, 8 to 15 percent slopes, very stony	Broadbrook	85	Hillslopes	No	---
	Paxton	12	Hillslopes	No	---
	Rainbow	3	Hillslopes	No	---
341D: Broadbrook very fine sandy loam, 15 to 25 percent slopes, very stony	Broadbrook	85	Hillslopes	No	---
	Narragansett	10	Ground moraines	No	---
	Paxton	5	Hillslopes	No	---
345A: Pittstown silt loam, 0 to 3 percent slopes	Pittstown	85	Depressions, drumlins	No	---
	Bernardston	5	Hillslopes	No	---
	Ridgebury	5	Depressions, drainageways	Yes	2B3
	Woodbridge	5	Hillslopes	No	---
345B: Pittstown silt loam, 3 to 8 percent slopes	Pittstown	85	Depressions, drumlins	No	---
	Bernardston	5	Hillslopes	No	---
	Ridgebury	5	Depressions, drainageways	Yes	2B3
	Woodbridge	5	Hillslopes	No	---
405B: Charlton fine sandy loam, 3 to 8 percent slopes	Charlton	80	Drumlins, ground moraines	No	---
	Canton	5	Hills	No	---
	Narragansett	3	Ground moraines	No	---
	Paxton	3	Hillslopes	No	---
	Pittstown	3	Depressions, drumlins	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
	Whitman	2	Depressions, drainageways	Yes	2B3, 3
	Woodbridge	2	Hillslopes	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
405C: Charlton fine sandy loam, 8 to 15 percent slopes	Charlton	85	Drumlins, ground moraines	No	---
	Canton	6	Hills	No	---
	Ridgebury	4	Depressions, drainageways	Yes	2B3
	Unnamed	3	---	Unranked	---
	Woodbridge	2	Hillslopes	No	---
407B: Charlton fine sandy loam, 3 to 8 percent slopes, extremely stony	Charlton	85	Drumlins, ground moraines	No	---
	Canton	10	Hills	No	---
	Ridgebury	3	Depressions, drainageways	Yes	2B3
	Newport	2	Drumlins, ridges, till plains	No	---
407C: Charlton fine sandy loam, 8 to 15 percent slopes, extremely stony	Charlton	85	Drumlins, ground moraines	No	---
	Canton	10	Hills	No	---
	Newport	3	Drumlins, ridges, till plains	No	---
	Ridgebury	2	Depressions, drainageways	Yes	2B3
407D: Charlton fine sandy loam, 15 to 25 percent slopes, extremely stony	Charlton	85	Drumlins, ground moraines	No	---
	Canton	10	Hills	No	---
	Newport	4	Drumlins, ridges, till plains	No	---
	Ridgebury	1	Depressions, drainageways	Yes	2B3
415B: Narragansett silt loam, 3 to 8 percent slopes	Narragansett	80	Ground moraines	No	---
	Canton	10	Hills	No	---
	Haven	10	Plains, terraces	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
415C:					
Narragansett silt loam, 8 to 15 percent slopes	Narragansett	80	Ground moraines	No	---
	Haven	10	Plains, terraces	No	---
	Canton	5	Hills	No	---
	Windsor	5	Deltas, flats, terraces	No	---
415D:					
Narragansett silt loam, 15 to 25 percent slopes	Narragansett	80	Ground moraines	No	---
	Canton	10	Hills	No	---
	Haven	5	Plains, terraces	No	---
	Windsor	5	Deltas, flats, terraces	No	---
416B:					
Narragansett silt loam, 3 to 8 percent slopes, very stony	Narragansett	80	Ground moraines	No	---
	Haven	10	Plains, terraces	No	---
	Canton	5	Hills	No	---
	Scituate	5	Depressions, hillslopes	No	---
416C:					
Narragansett silt loam, 8 to 15 percent slopes, very stony	Narragansett	80	Ground moraines	No	---
	Charlton	10	Drumlins, ground moraines	No	---
	Canton	7	Hills	No	---
	Scituate	3	Depressions, hillslopes	No	---
416D:					
Narragansett silt loam, 15 to 25 percent slopes, very stony	Narragansett	80	Ground moraines	No	---
	Canton	10	Hills	No	---
	Charlton	10	Drumlins, ground moraines	No	---
420B:					
Canton fine sandy loam, 3 to 8 percent slopes	Canton	85	Hills	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
420C: Canton fine sandy loam, 8 to 15 percent slopes	Canton	85	Hills	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---
420D: Canton fine sandy loam, 15 to 25 percent slopes	Canton	85	Hills	No	---
	Charlton	10	Drumlins, ground moraines	No	---
	Hinckley	5	Eskers, ridges, terraces	No	---
422B: Canton fine sandy loam, 3 to 8 percent slopes, extremely stony	Canton	85	Hills	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---
422C: Canton fine sandy loam, 8 to 15 percent slopes, extremely stony	Canton	85	Hills	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---
	Scituate	5	Depressions, hillslopes	No	---
422D: Canton fine sandy loam, 15 to 25 percent slopes, extremely stony	Canton	85	Hills	No	---
	Charlton	10	Drumlins, ground moraines	No	---
	Hinckley	5	Eskers, ridges, terraces	No	---
424B: Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery	Canton	85	Hills	No	---
	Charlton	5	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
424B: Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery	Scituate	5	Depressions, hillslopes	No	---
424C: Canton fine sandy loam, 8 to 15 percent slopes, extremely bouldery	Canton	85	Hills	No	---
	Charlton	10	Drumlins, ground moraines	No	---
	Scituate	5	Depressions, hillslopes	No	---
424D: Canton fine sandy loam, 15 to 25 percent slopes, extremely bouldery	Canton	85	Hills	No	---
	Charlton	10	Drumlins, ground moraines	No	---
	Hinckley	5	Eskers, ridges, terraces	No	---
600: Pits, gravel	Pits, gravel	95	---	Unranked	---
	Rock outcrop	3	---	Unranked	---
	Water	2	---	Unranked	---
601: Pits, quarry	Pits, quarry	98	---	Unranked	---
	Water	2	---	Unranked	---
602: Urban land	Urban land	85	---	Unranked	---
	Rock outcrop	5	---	Unranked	---
	Udorthents, loamy	5	---	No	---
	Udorthents, wet substratum	5	---	No	---
603: Urban land, wet substratum	Urban land	85	---	Unranked	---
	Udorthents, loamy	10	---	No	---
	Rock outcrop	5	---	Unranked	---
621B: Scio-Urban land complex, 0 to 8 percent slopes	Scio	40	Depressions	No	---
	Urban land	40	---	Unranked	---
	Haven	10	Plains, terraces	No	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
621B: Scio-Urban land complex, 0 to 8 percent slopes	Tisbury	5	Plains, terraces	No	---
	Sudbury	4	Plains, terraces	No	---
	Unnamed	1	---	Unranked	---
622C: Paxton-Urban land complex, 3 to 15 percent slopes	Paxton	40	Hillslopes	No	---
	Urban land	40	---	Unranked	---
	Charlton	10	Drumlins, ground moraines	No	---
	Montauk	5	Hillslopes	No	---
	Woodbridge	5	Hillslopes	No	---
623C: Woodbridge-Urban land complex, 3 to 15 percent slopes	Urban land	40	---	Unranked	---
	Woodbridge	40	Hillslopes	No	---
	Paxton	10	Hillslopes	No	---
	Scituate	7	Depressions, hillslopes	No	---
	Ridgebury	3	Depressions, drainageways	Yes	2B3
624B: Haven-Urban land complex, 0 to 8 percent slopes	Haven	40	Plains, terraces	No	---
	Urban land	40	---	Unranked	---
	Tisbury	10	Plains, terraces	No	---
	Hinckley	5	Eskers, ridges, terraces	No	---
	Merrimac	5	Plains, terraces	No	---
626B: Merrimac-Urban land complex, 0 to 8 percent slopes	Merrimac	40	Plains, terraces	No	---
	Urban land	40	---	Unranked	---
	Sudbury	10	Plains, terraces	No	---
	Hinckley	5	Eskers, ridges, terraces	No	---
	Windsor	5	Deltas, flats, terraces	No	---
627C: Newport-Urban land complex, 3 to 15 percent slopes	Newport	45	Drumlins, moraines, ridges	No	---
	Urban land	40	---	Unranked	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
627C: Newport-Urban land complex, 3 to 15 percent slopes	Udorthents, loamy	10	---	No	---
	Pittstown	3	Depressions, drumlins	No	---
	Paxton	2	Hillslopes	No	---
629C: Canton-Charlton-Urban land complex, 3 to 15 percent slopes	Canton	40	Hills	No	---
	Charlton	30	Drumlins, ground moraines	No	---
	Urban land	25	---	Unranked	---
	Montauk	2	Hillslopes	No	---
	Scituate	2	Depressions, hillslopes	No	---
	Udorthents, loamy	1	---	No	---
631C: Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky	Charlton	40	Drumlins, ground moraines	No	---
	Urban land	40	---	Unranked	---
	Hollis	10	Hillslopes, ridges	No	---
	Canton	4	Hills	No	---
	Rock outcrop	2	---	Unranked	---
	Udorthents, loamy	2	---	No	---
	Montauk	1	Hillslopes	No	---
	Scituate	1	Depressions, hillslopes	No	---
652: Udorthents, refuse substratum	Udorthents, refuse substratum	80	---	No	---
	Pits, gravel	10	---	Unranked	---
	Udorthents, sandy	5	---	No	---
	Udorthents, loamy	3	---	No	---
	Udorthents, wet substratum	2	---	No	---
653: Udorthents, sandy	Udorthents, sandy	85	---	No	---
	Udorthents, loamy	5	---	No	---
	Unnamed	5	---	Unranked	---

Table 19.—Hydric Soils—continued

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
653: Udorthents, sandy	Urban land	5	---	Unranked	---
654: Udorthents, loamy	Udorthents, loamy	80	---	No	---
	Udorthents, sandy	10	---	No	---
	Udorthents, wet substratum	5	---	Yes	---
	Urban land	5	---	Unranked	---
655: Udorthents, wet substratum	Udorthents, wet substratum	85	---	No	---
	Urban land	8	---	Unranked	---
	Freetown	4	Bogs, depressions	Yes	1
	Swansea	3	Bogs, depressions	Yes	1
656: Udorthents-Urban land complex	Udorthents	40	---	No	---
	Urban land	40	---	Unranked	---
	Canton	10	Hills	No	---
	Merrimac	5	Plains, terraces	No	---
	Paxton	5	Hillslopes	No	---

Explanation of hydric criteria codes:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
   - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
   - B. are poorly drained or very poorly drained and have either:
     - 1.) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
     - 2.) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
     - 3.) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Table 20.—Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Bernardston	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Birchwood	Sandy over loamy, mixed, nonacid, mesic Aquic Udorthents
Birdsall	Coarse-silty, mixed, nonacid, mesic Typic Humaquepts
Broadbrook	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Canton	Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Typic Dystrochrepts
Carver	Mesic, uncoated Typic Quartzipsamments
Charlton	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Deerfield	Mixed, mesic Aquic Udipsamments
Freetown	Dysic, mesic Typic Medisaprists
Haven	Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Typic Dystrochrepts
Hinckley	Sandy-skeletal, mixed, mesic Typic Udorthents
Hollis	Loamy, mixed, mesic Lithic Dystrochrepts
Limerick	Coarse-silty, mixed, nonacid, mesic Typic Fluvaquents
Merrimac	Sandy, mixed, mesic Typic Dystrochrepts
Montauk	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Narragansett	Coarse-loamy over sandy or sandy-skeletal, mixed, mesic Typic Dystrochrepts
Newport	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Occum	Coarse-loamy, mixed, mesic Fluventic Dystrochrepts
Paxton	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Pittstown	Coarse-loamy, mixed, mesic Aquic Dystrochrepts
Pootatuck	Coarse-loamy, mixed, mesic Fluvaquentic Dystrochrepts
Quonset	Sandy-skeletal, mixed, mesic Typic Udorthents
Rainbow	Coarse-loamy, mixed, mesic Aquic Dystrochrepts
Raynham	Coarse-silty, mixed, nonacid, mesic Aeric Haplaquepts
Raypol	Coarse-loamy over sandy or sandy-skeletal, mixed, acid, mesic Aeric Haplaquepts
Ridgebury	Coarse-loamy, mixed, nonacid, mesic Aeric Haplaquepts
Rippowam	Coarse-loamy, mixed, nonacid, mesic Aeric Fluvaquents
Saco	Coarse-silty, mixed, nonacid, mesic Fluvaquentic Humaquepts
Scarboro	Sandy, mixed, mesic Histic Humaquepts
Scio	Coarse-silty, mixed, mesic Aquic Dystrochrepts
Scituate	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Sudbury	Sandy, mixed, mesic Aquic Dystrochrepts
Suncook	Mixed, mesic Typic Udipsamments
Swansea	Sandy or sandy-skeletal, mixed, dysic, mesic Terric Medisaprists
Tisbury	Coarse-silty over sandy or sandy-skeletal, mixed, mesic Aquic Dystrochrepts
Udorthents	Udorthents
Wareham	Mixed, mesic Humaqueptic Psammaquents
Whitman	Coarse-loamy, mixed, nonacid, mesic Typic Humaquepts
Windsor	Mixed, mesic Typic Udipsamments
Winooski	Coarse-silty, mixed, nonacid, mesic Aquic Udifluvents
Woodbridge	Coarse-loamy, mixed, mesic Aquic Dystrochrepts

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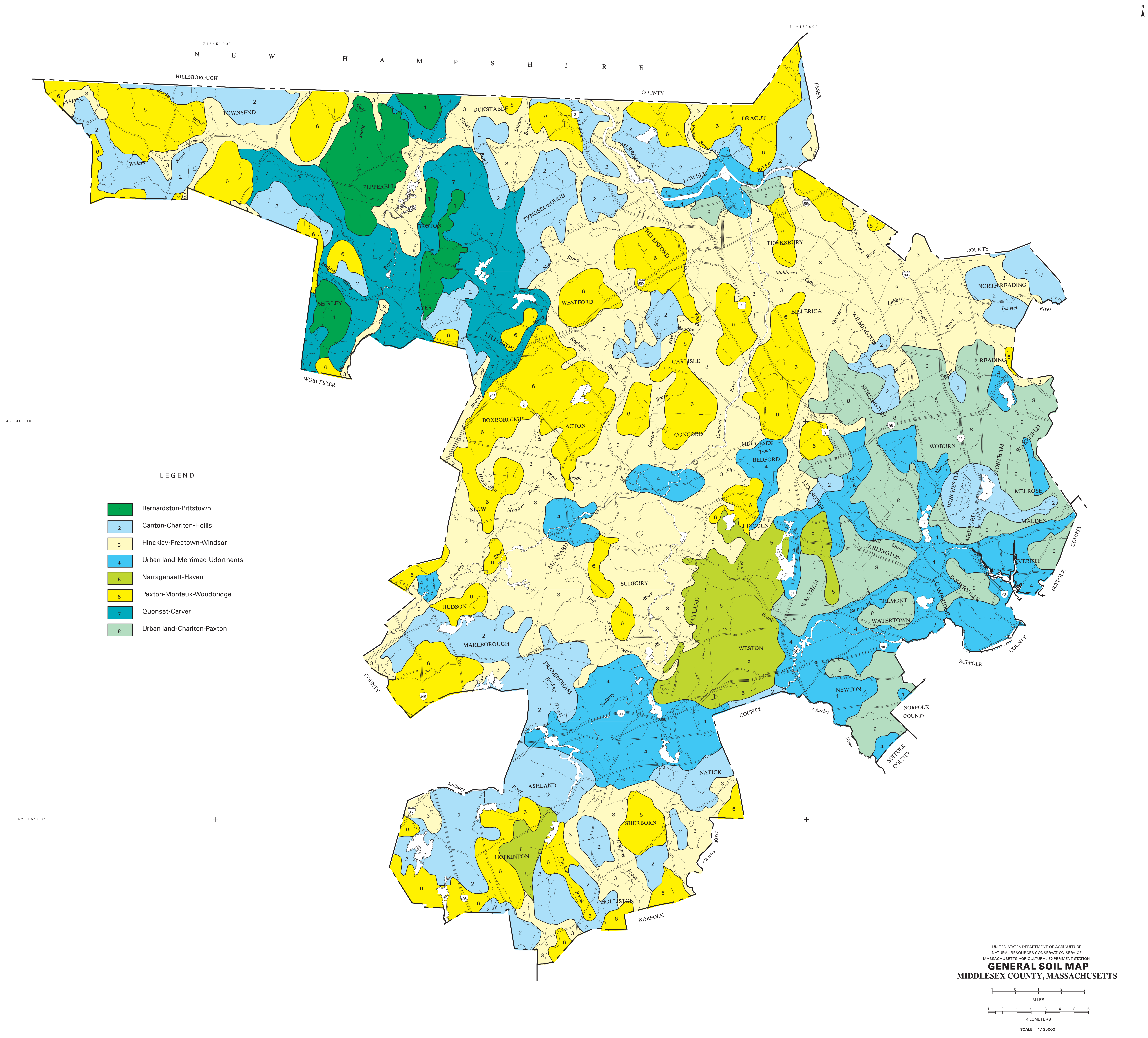
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71° 45' 00"
71° 15' 00"
42° 30' 00"
42° 15' 00"
NEW HAMPSHIRE
HILLSBOROUGH COUNTY
ESSEX COUNTY
WORCESTER COUNTY
NORFOLK COUNTY
SUFFOLK COUNTY
LEGEND
1 Bernardston-Pittstown
2 Canton-Charlton-Hollis
3 Hinckley-Freetown-Windsor
4 Urban land-Merrimac-Udorthents
5 Narragansett-Haven
6 Paxton-Montauk-Woodbridge
7 Quonset-Carver
8 Urban land-Charlton-Paxton
ASHBY
TOWNSEND
PEPPERELL
DUNSTABLE
TYNGSBOROUGH
DRACUT
LOWELL
TEWKSBURY
GROTON
SHIRLEY
AYER
LITTLETON
WESTFORD
CHELMSFORD
BILLERICA
WILMINGTON
NORTH READING
READING
CARLISLE
BOXBOROUGH
ACTON
CONCORD
BEDFORD
BURLINGTON
WOBURN
STONEHAM
WAKEFIELD
MELROSE
MALDEN
EVERETT
MEDFORD
WINCHESTER
LEXINGTON
ARLINGTON
SOMERVILLE
CAMBRIDGE
BELMONT
WATERTOWN
LINCOLN
WALTHAM
STOW
MAYNARD
SUDBURY
WAYLAND
WESTON
HUDSON
MARLBOROUGH
FRAMINGHAM
NATICK
NEWTON
ASHLAND
SHERBORN
HOPKINTON
HOLLISTON
MERRIMACK RIVER
1 0 1 2 3
MILES
1 0 1 2 3 4 5 6
KILOMETERS

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
MASSACHUSETTS AGRICULTURAL EXPERIMENT STATION

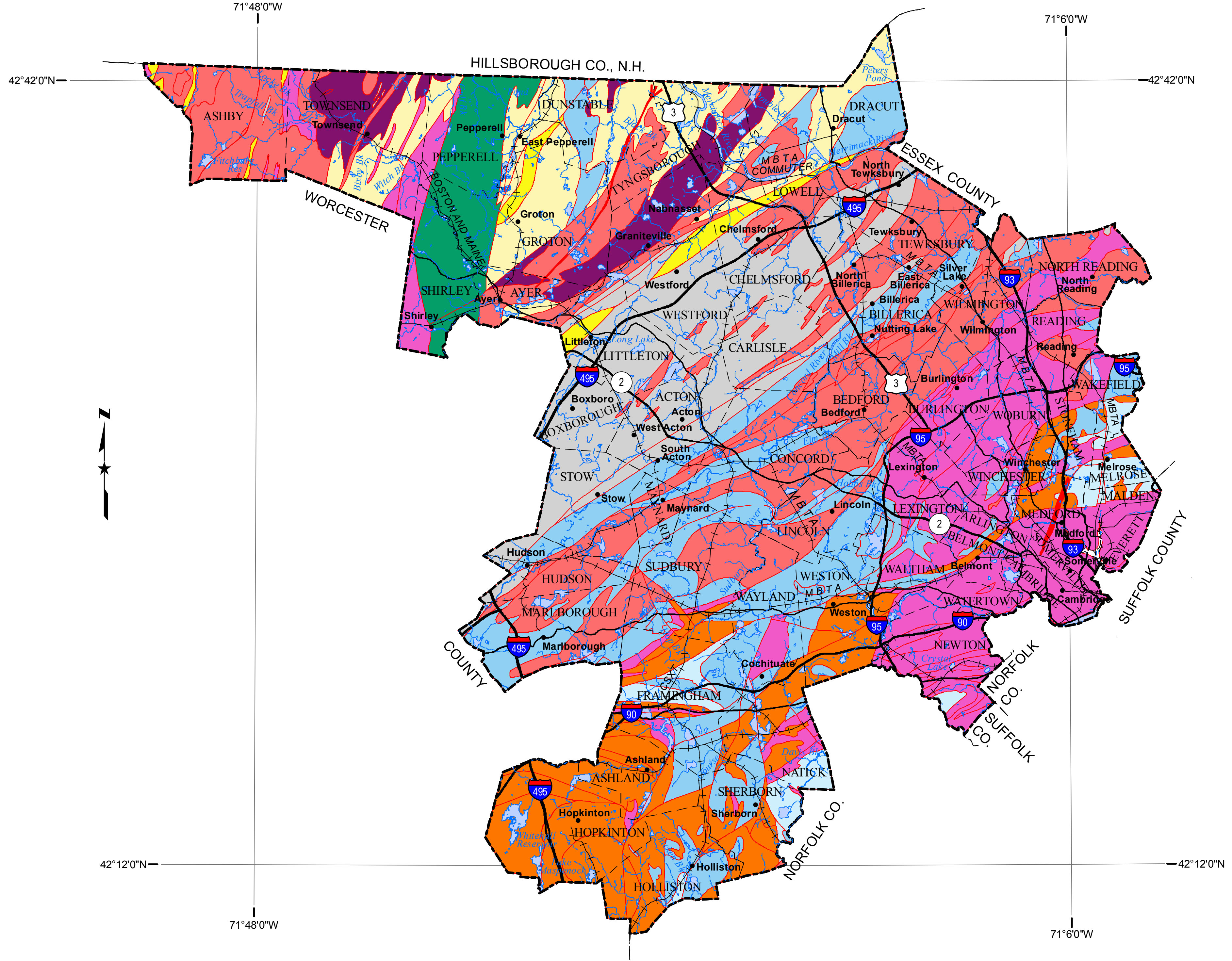
GENERAL SOIL MAP
MIDDLESEX COUNTY, MASSACHUSETTS

SCALE = 1:135000

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

US DEPARTMENT OF AGRICULTURE

NATURAL RESOURCES CONSERVATION SERVICE



71°48'0"W
71°6'0"W
42°42'0"N
42°12'0"N
HILLSBOROUGH CO., N.H.
WORCESTER
COUNTY
ESSEX COUNTY
SUFFOLK COUNTY
NORFOLK CO.
NORFOLK / CO.
SUFFOLK CO.
N
ASHBY
TOWNSEND
Townsend
PEPPERELL
Pepperell
East Pepperell
DUNSTABLE
DRACUT
Dracut
TYNGSBOROUGH
LOWELL
MBTA COMMUTER
North Tewksbury
Tewksbury
TEWKSBURY
Groton
GROTON
Graniteville
Nabnasset
Chelmsford
CHELMSFORD
SHIRLEY
Shirley
Ayer
AYER
Westford
WESTFORD
North Billerica
East Billerica
Silver Lake
Billerica
BILLERICA
Nutting Lake
WILMINGTON
Wilmington
NORTH READING
North Reading
READING
Reading
Littleton
LITTLETON
CARLISLE
Burlington
BURLINGTON
WAKEFIELD
Boxboro
BOXBOROUGH
ACTON
Acton
West Acton
South Acton
BEDFORD
Bedford
WOBURN
CONCORD
Lexington
Winchester
WINCHESTER
Melrose
MELROSE
MALDEN
STOW
Stow
Maynard
Lincoln
LINCOLN
LEXINGTON
MEDFORD
Medford
ARLINGTON
BELMONT
Belmont
EVERETT
Somerville
Cambridge
CAMBRIDGE
Hudson
HUDSON
SUDBURY
WESTON
Weston
WALTHAM
WATERTOWN
MARLBOROUGH
Marlborough
WAYLAND
Cochituate
NEWTON
FRAMINGHAM
Ashland
ASHLAND
NATICK
SHERBORN
Sherborn
Hopkinton
HOPKINTON
Holliston
HOLLISTON
BOSTON AND MAINE
MBTA
495
93
95
90
3
2

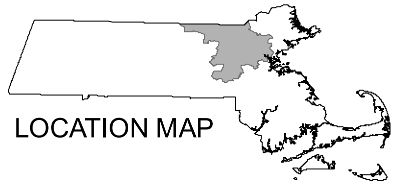
GENERAL BEDROCK GEOLOGY

MIDDLESEX COUNTY, MASSACHUSETTS

SCALE: 1:350,000

5 2.5 0 5 10

MILES



LOCATION MAP

LEGEND

County Line

Minor Civil Divisions

Towns

Interstate Highway

Federal Highway

State Highway

Divided Roads

Primary Roads

Railroads

Drainage

Lakes

Bedrock Lithology

🟧 Granite of Avalon Terrane

🟥 Basalt

🟨 Calcgranofels

🟩 Calcpelite

🟦 Felsic Volcanics

🟥 Granite, Other

🟦 Mafic Rocks

⬜ Metamorphic Rocks, Other

🟪 Pelitic Rocks

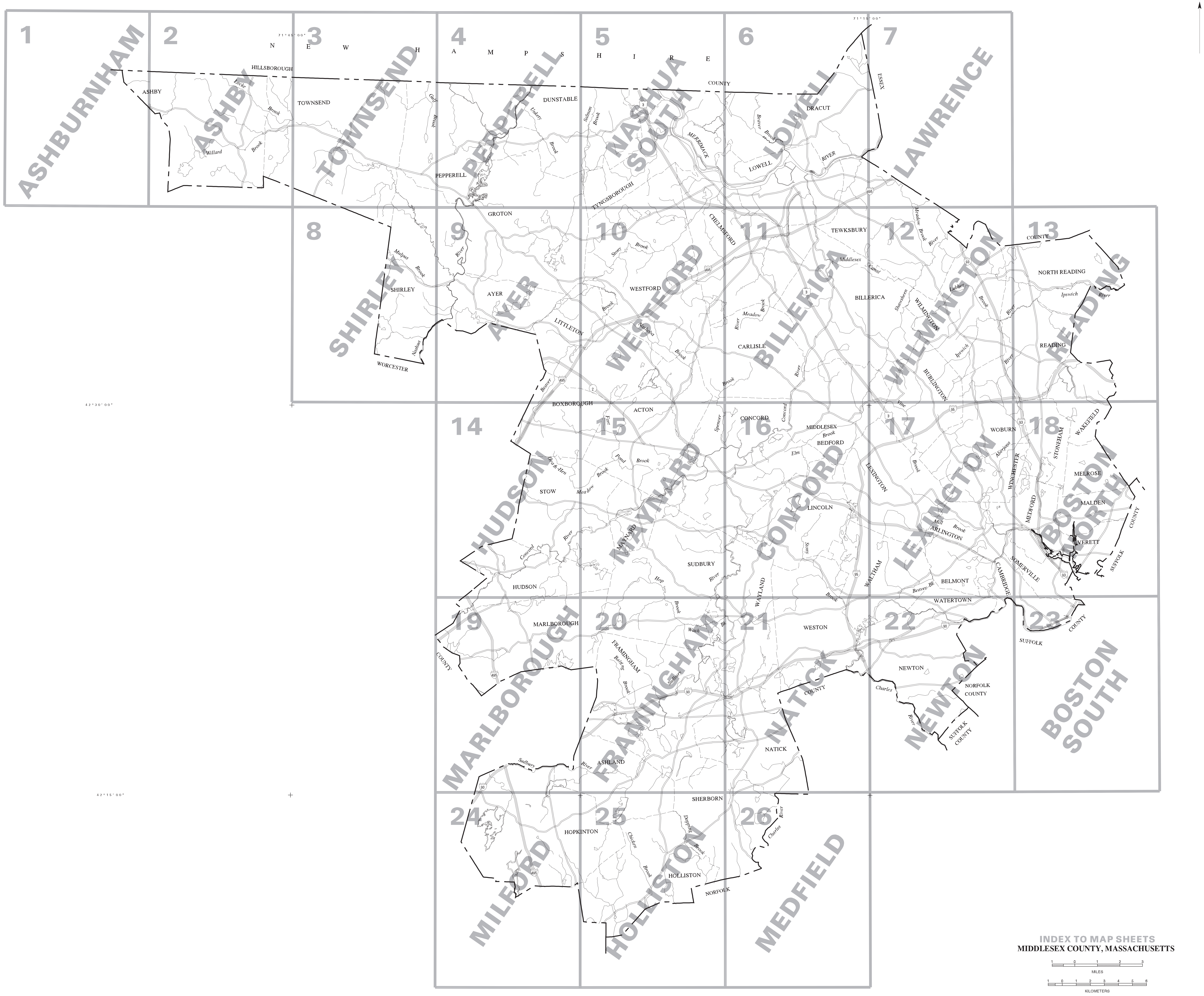
🟪 Peraluminous Granite

🟨 Sulfidic Schists

Source: 2004 MassGIS datalayer derived
from USGS geologic information.

December 2008 1008768

USDA NRCS National Cartography & Geospatial Center, Fort Worth, Texas 2008


1 ASHBURNHAM
2 ASHBY
3 TOWNSEND
4 PEPPERELL
5 NASHUA SOUTH
6 LOWELL
7 LAWRENCE
8 SHIRLEY
9 AYER
10 WESTFORD
11 BILLERICA
12 WILMINGTON
13 READING
14 HUDSON
15 MAYNARD
16 CONCORD
17 LEXINGTON
18 BOSTON NORTH
19 MARLBOROUGH
20 FRAMINGHAM
21 NATICK
22 NEWTON
23 BOSTON SOUTH
24 MILFORD
25 HOLLISTON
26 MEDFIELD
N
NEW HAMPSHIRE
HILLSBOROUGH COUNTY
ESSEX COUNTY
WORCESTER COUNTY
NORFOLK COUNTY
SUFFOLK COUNTY
71°45'00"
71°15'00"
42°30'00"
42°15'00"
ASHBY
TOWNSEND
PEPPERELL
DUNSTABLE
TYNGSBOROUGH
DRACUT
LOWELL
GROTON
CHELMSFORD
TEWKSBURY
SHIRLEY
AYER
WESTFORD
BILLERICA
NORTH READING
LITTLETON
CARLISLE
WILMINGTON
READING
BOXBOROUGH
ACTON
CONCORD
BEDFORD
BURLINGTON
WOBURN
STONEHAM
WAKEFIELD
STOW
LINCOLN
LEXINGTON
WINCHESTER
MELROSE
MALDEN
MEDFORD
ARLINGTON
EVERETT
SUDBURY
WAYLAND
WALTHAM
BELMONT
SOMERVILLE
CAMBRIDGE
HUDSON
WATERTOWN
MARLBOROUGH
WESTON
FRAMINGHAM
NEWTON
NATICK
ASHLAND
SHERBORN
HOPKINTON
HOLLISTON
NORFOLK
MERRIMACK RIVER
Concord River
Sudbury River
Charles River
Nashua River
Assabet River

INDEX TO MAP SHEETS

MIDDLESEX COUNTY, MASSACHUSETTS

SCALE = 1:135000

SOIL LEGEND

SYMBOL	NAME
1	Water
2A	Pootatuck fine sandy loam, 0 to 3 percent slopes
4A	Rippowam fine sandy loam, 0 to 3 percent slopes
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes
8A	Limerick silt loam, 0 to 3 percent slopes
30B	Raynham silt loam, 0 to 5 percent slopes
32B	Wareham loamy fine sand, 0 to 5 percent slopes
33B	Raypol silt loam, 0 to 5 percent slopes
36A	Saco mucky silt loam, 0 to 1 percent slopes
44A	Birdsall mucky silt loam, 0 to 1 percent slopes
51A	Swansea muck, 0 to 1 percent slopes
52A	Freetown muck, 0 to 1 percent slopes
53A	Freetown muck, ponded, 0 to 1 percent slopes
71B	Ridgebury fine sandy loam, 3 to 8 percent slopes, extremely stony
73B	Whitman fine sandy loam, 0 to 5 percent slopes, extremely stony
97A	Suncook loamy sand, 0 to 3 percent slopes
98A	Winooski very fine sandy loam, 0 to 3 percent slopes
99A	Occum very fine sandy loam, 0 to 3 percent slopes
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes
103C	Charlton-Hollis-Rock outcrop complex, 8 to 15 percent slopes
103D	Charlton-Hollis-Rock outcrop complex, 15 to 25 percent slopes
104C	Hollis-Rock outcrop-Charlton complex, 3 to 15 percent slopes
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes
105E	Rock outcrop-Hollis complex, 3 to 35 percent slopes
106C	Narragansett-Hollis-Rock outcrop complex, 3 to 15 percent slopes
106D	Narragansett-Hollis-Rock outcrop complex, 15 to 25 percent slopes
223A	Scio very fine sandy loam, 0 to 3 percent slopes
223B	Scio very fine sandy loam, 3 to 8 percent slopes
251A	Haven silt loam, 0 to 3 percent slopes
251B	Haven silt loam, 3 to 8 percent slopes
253A	Hinckley loamy sand, 0 to 3 percent slopes
253B	Hinckley loamy sand, 3 to 8 percent slopes
253C	Hinckley loamy sand, 8 to 15 percent slopes
253D	Hinckley loamy sand, 15 to 25 percent slopes
253E	Hinckley loamy sand, 25 to 35 percent slopes
254A	Merrimac fine sandy loam, 0 to 3 percent slopes
254B	Merrimac fine sandy loam, 3 to 8 percent slopes
254C	Merrimac fine sandy loam, 8 to 15 percent slopes
255A	Windsor loamy sand, 0 to 3 percent slopes
255B	Windsor loamy sand, 3 to 8 percent slopes
255C	Windsor loamy sand, 8 to 15 percent slopes
256A	Deerfield loamy sand, 0 to 3 percent slopes
256B	Deerfield loamy sand, 3 to 8 percent slopes
259A	Carver loamy coarse sand, 0 to 3 percent slopes
259B	Carver loamy coarse sand, 3 to 8 percent slopes
259C	Carver loamy coarse sand, 8 to 15 percent slopes
260B	Sudbury fine sandy loam, 3 to 8 percent slopes
261A	Tisbury silt loam, 0 to 3 percent slopes
261B	Tisbury silt loam, 3 to 8 percent slopes
262B	Quonset sandy loam, 3 to 8 percent slopes
262C	Quonset sandy loam, 8 to 15 percent slopes
262D	Quonset sandy loam, 15 to 25 percent slopes
262E	Quonset sandy loam, 25 to 35 percent slopes
300B	Montauk fine sandy loam, 3 to 8 percent slopes
300C	Montauk fine sandy loam, 8 to 15 percent slopes
300D	Montauk fine sandy loam, 15 to 25 percent slopes
302B	Montauk fine sandy loam, 3 to 8 percent slopes, extremely stony
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony
302D	Montauk fine sandy loam, 15 to 25 percent slopes, extremely stony
305B	Paxton fine sandy loam, 3 to 8 percent slopes
305C	Paxton fine sandy loam, 8 to 15 percent slopes
305D	Paxton fine sandy loam, 15 to 25 percent slopes
305E	Paxton fine sandy loam, 25 to 35 percent slopes
307B	Paxton fine sandy loam, 3 to 8 percent slopes, extremely stony
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony
307D	Paxton fine sandy loam, 15 to 25 percent slopes, extremely stony
307E	Paxton fine sandy loam, 25 to 35 percent slopes, extremely stony
310A	Woodbridge fine sandy loam, 0 to 3 percent slopes
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes
310C	Woodbridge fine sandy loam, 8 to 15 percent slopes
311B	Woodbridge fine sandy loam, 3 to 8 percent slopes, very stony
311C	Woodbridge fine sandy loam, 8 to 15 percent slopes, very stony
312B	Woodbridge fine sandy loam, 3 to 8 percent slopes, extremely stony
312C	Woodbridge fine sandy loam, 8 to 15 percent slopes, extremely stony
315B	Scituate fine sandy loam, 3 to 8 percent slopes
315C	Scituate fine sandy loam, 8 to 15 percent slopes
317B	Scituate fine sandy loam, 3 to 8 percent slopes, extremely stony
317C	Scituate fine sandy loam, 8 to 15 percent slopes, extremely stony
320B	Birchwood fine sandy loam, 3 to 8 percent slopes
325D	Newport channery fine sandy loam, 8 to 25 percent slopes
330B	Bernardston very fine sandy loam, 3 to 8 percent slopes
330C	Bernardston very fine sandy loam, 8 to 15 percent slopes
330D	Bernardston very fine sandy loam, 15 to 25 percent slopes
330E	Bernardston very fine sandy loam, 25 to 35 percent slopes
335B	Rainbow silt loam, 3 to 8 percent slopes
336B	Rainbow silt loam, 3 to 8 percent slopes, very stony
340B	Broadbrook very fine sandy loam, 3 to 8 percent slopes
340D	Broadbrook very fine sandy loam, 8 to 25 percent slopes
341B	Broadbrook very fine sandy loam, 3 to 8 percent slopes, very stony
341C	Broadbrook very fine sandy loam, 8 to 15 percent slopes, very stony
341D	Broadbrook very fine sandy loam, 15 to 25 percent slopes, very stony
345A	Pittstown silt loam, 0 to 3 percent slopes
345B	Pittstown silt loam, 3 to 8 percent slopes
405B	Charlton fine sandy loam, 3 to 8 percent slopes
405C	Charlton fine sandy loam, 8 to 15 percent slopes
407B	Charlton fine sandy loam, 3 to 8 percent slopes, extremely stony
407C	Charlton fine sandy loam, 8 to 15 percent slopes, extremely stony
407D	Charlton fine sandy loam, 15 to 25 percent slopes, extremely stony
415B	Narragansett silt loam, 3 to 8 percent slopes
415C	Narragansett silt loam, 8 to 15 percent slopes
415D	Narragansett silt loam, 15 to 25 percent slopes
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony
416C	Narragansett silt loam, 8 to 15 percent slopes, very stony
416D	Narragansett silt loam, 15 to 25 percent slopes, very stony
420B	Canton fine sandy loam, 3 to 8 percent slopes
420C	Canton fine sandy loam, 8 to 15 percent slopes
420D	Canton fine sandy loam, 15 to 25 percent slopes
422B	Canton fine sandy loam, 3 to 8 percent slopes, extremely stony
422C	Canton fine sandy loam, 8 to 15 percent slopes, extremely stony
422D	Canton fine sandy loam, 15 to 25 percent slopes, extremely stony
424B	Canton fine sandy loam, 3 to 8 percent slopes, extremely bouldery
424C	Canton fine sandy loam, 8 to 15 percent slopes, extremely bouldery
424D	Canton fine sandy loam, 15 to 25 percent slopes, extremely bouldery
600	Pits, gravel
601	Pits, quarry
602	Urban land
603	Urban land, wet substratum
621B	Scio-Urban land complex, 0 to 8 percent slopes
622C	Paxton-Urban land complex, 3 to 15 percent slopes
623C	Woodbridge-Urban land complex, 3 to 15 percent slopes
624B	Haven-Urban land complex, 0 to 8 percent slopes
626B	Merrimac-Urban land complex, 0 to 8 percent slopes
627C	Newport-Urban land complex, 3 to 15 percent slopes
629C	Canton-Charlton-Urban land complex, 3 to 15 percent slopes
631C	Charlton-Urban land-Hollis complex, 3 to 15 percent slopes, rocky
652	Udorthents, refuse substratum
653	Udorthents, sandy
654	Udorthents, loamy
655	Udorthents, wet substratum
656	Udorthents-Urban land complex

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

National, state, or province	– – ——
County or parish	—— –
Minor civil division	— — — —
Reservation (national forest or park, state forest or park)	—— – ——
Limit of soil survey (label) and/or denied access area	——
Field sheet matchline and neatline	——
Cemetery	St. Johns Cemetery †

STATE COORDINATE TICK 1 890 000 FEET	⊥
GEOGRAPHIC COORDINATE TICK	+

ROAD EMBLEMS AND DESIGNATIONS

Interstate	173	79 345
Federal	287	410 224
State	52	52 347

HYDROGRAPHIC FEATURES

STREAMS

Perennial stream, double line	═
Perennial stream, single line	∼
Intermittent stream	∼
Drainage end	→

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS	2A 53A
Bedrock escarpment	VVVVVVVVVV
Other than bedrock escarpment	WWWWWWWWWW
Short steep slope	. . . .
Gravel pit	✕
Mine or quarry	⚒

MISCELLANEOUS SURFACE FEATURES

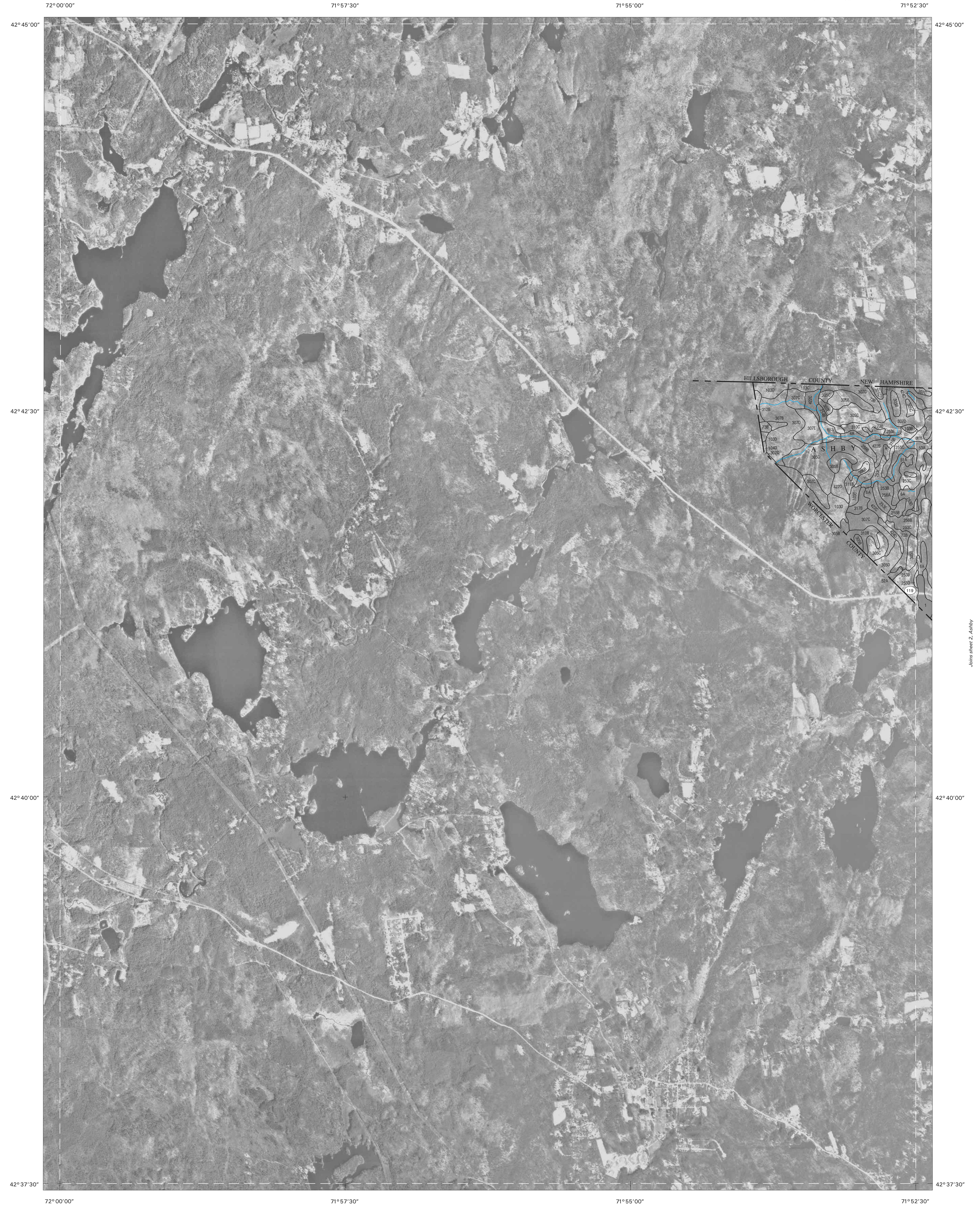
Gravelly spot	∴
Marsh or swamp	ш
Rock outcrop	∨
Sandy spot	⁙
Spoil area	≡
Stony spot	0
Very stony spot	00
Wet spot	Ψ

AD HOC FEATURES

Bouldery spot	Δ
Dry spot	⊗

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
ASHBURNHAM QUADRANGLE
SHEET NUMBER 1 OF 26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42° 37′30″
HILLSBOROUGH COUNTY NEW HAMPSHIRE
WORCESTER COUNTY
A S H B Y
103D
103C
307C
422C
305C
307E
254B
305B
73B
424C
312B
307B
307D
653
310C
4A
253E
103B
32B
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256B
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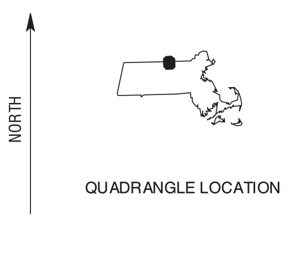
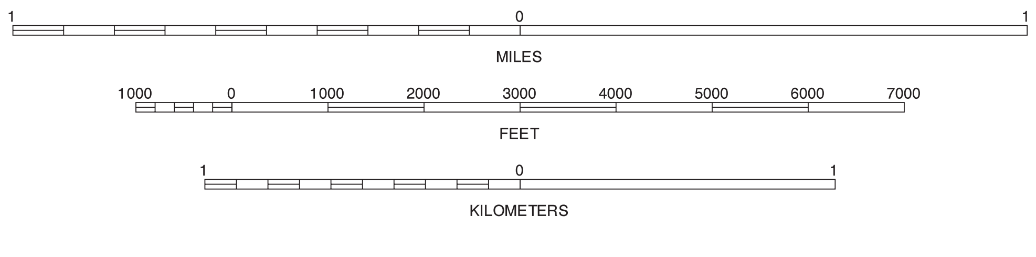
255C
53A
51A
422D
311B
6A
253C
253B
256A
253D
317B
255B
310B
424D
52A
119
1
Joins sheet 2, Ashby

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

SCALE 1:24000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FEET
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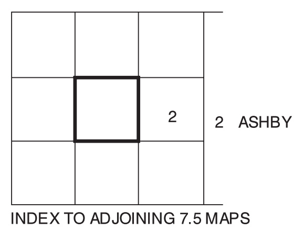
KILOMETERS



INDEX TO ADJOINING 7.5 MAPS

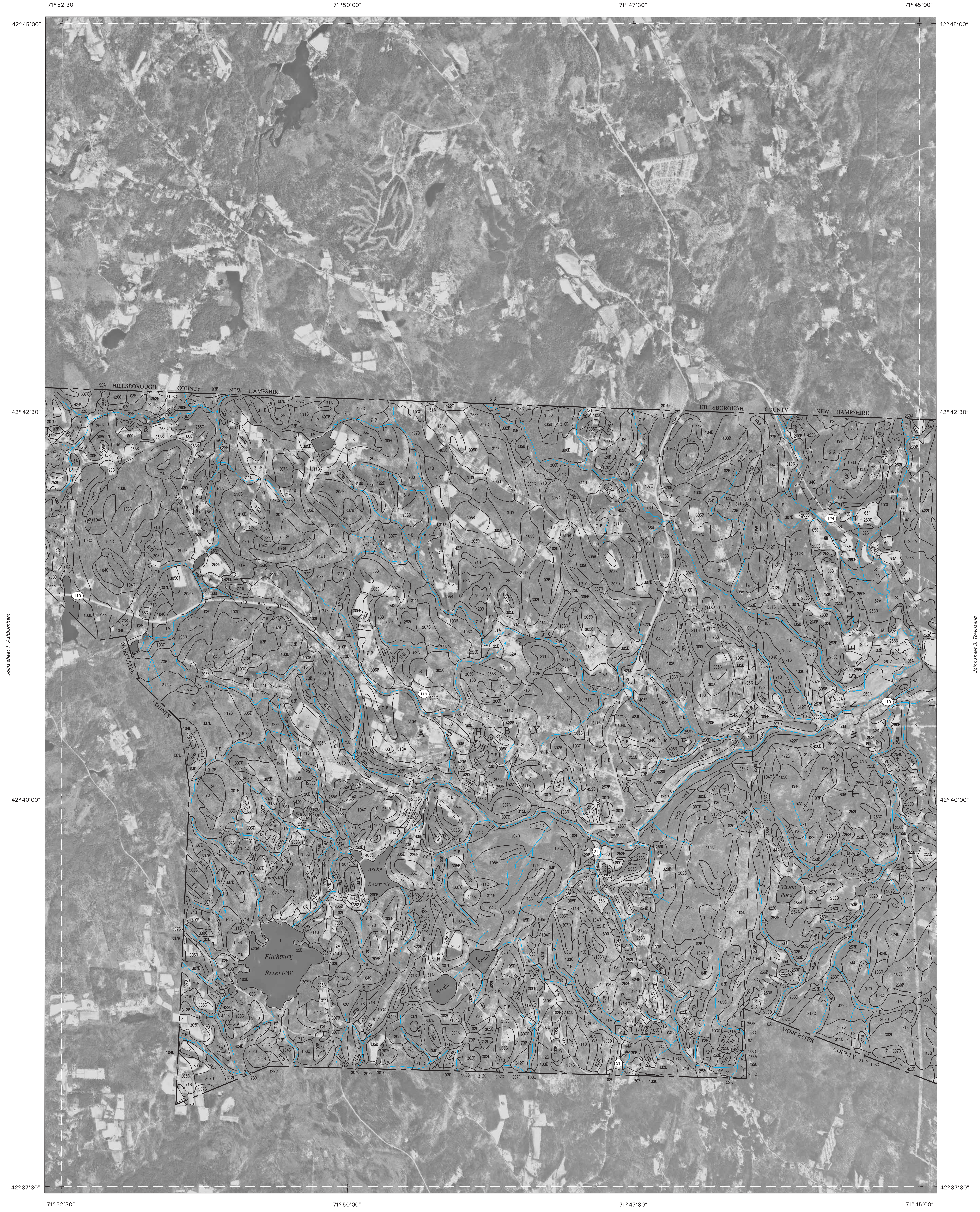
ASHBURNHAM, MASSACHUSETTS

7.5 MINUTE SERIES
SHEET NUMBER 1 OF 26

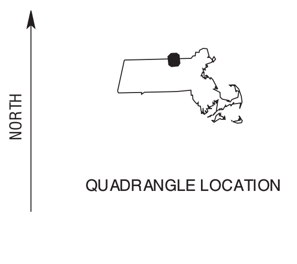
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
ASHBY QUADRANGLE
SHEET NUMBER 2 OF 26


71° 52′30″
71° 50′00″
71° 47′30″
71° 45′00″
42° 45′00″
42° 42′30″
42° 40′00″
42° 37′30″
HILLSBOROUGH COUNTY NEW HAMPSHIRE
WORCESTER COUNTY
A S H B Y
T O W N S E N D
Ashby Reservoir
Fitchburg Reservoir
Wright Pond
Vinton Pond
119
124
31
Joins sheet 1, Ashburnham
Joins sheet 3, Townsend

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.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QUADRANGLE LOCATION

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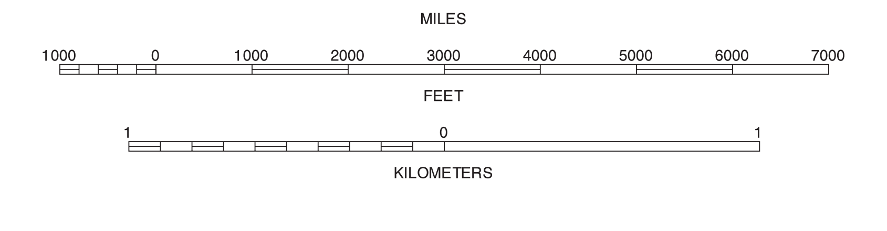
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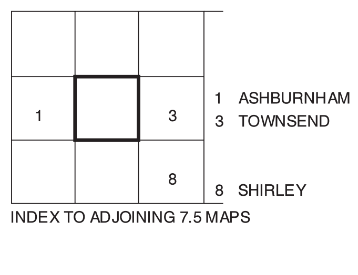
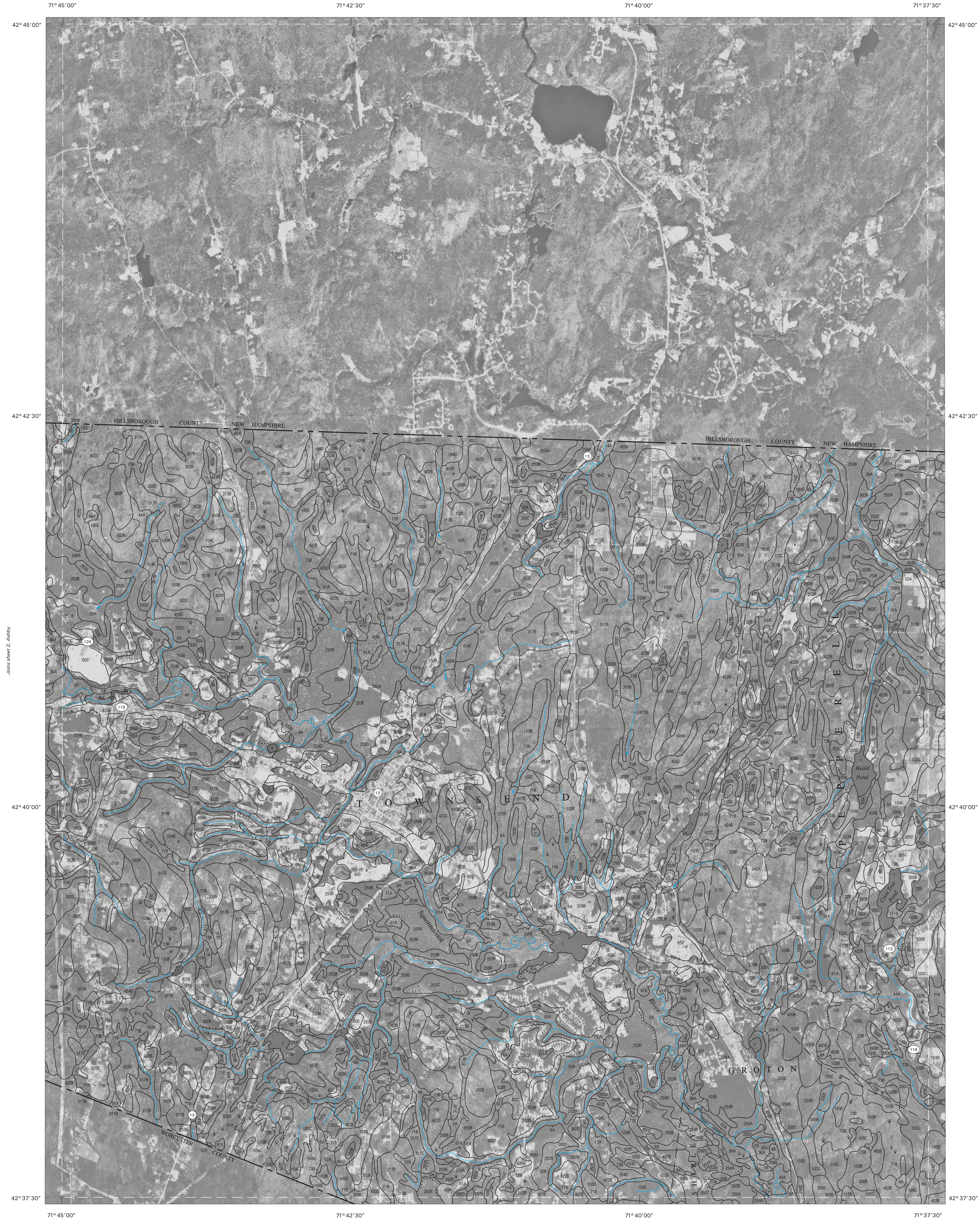

1
3
8
1 ASHBURNHAM
3 TOWNSEND
8 SHIRLEY

INDEX TO ADJOINING 7.5 MAPS

Joins sheet 8, Shirley

ASHBY, MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.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HILLSBOROUGH COUNTY NEW HAMPSHIRE
WORCESTER COUNTY
T O W N S E N D
P E P P E R E L L
G R O T O N
S H I R L E Y
Heald Pond
Squannacook River
13
119
124
113
Joins sheet 2, Ashby
Joins sheet 4, Pepperell
Joins sheet 8, Shirley
Joins sheet 9, Ayer

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.

NORTH
QUADRANGLE LOCATION

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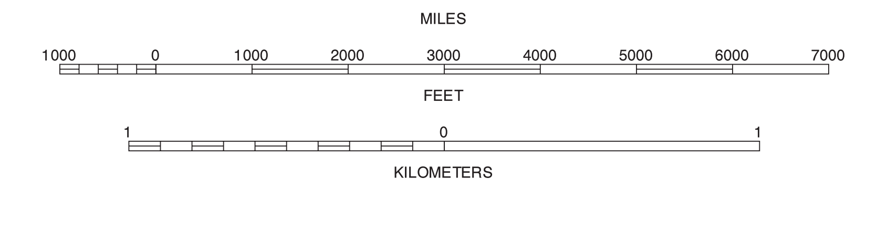
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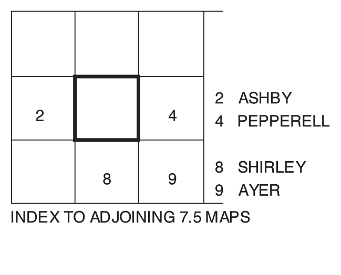
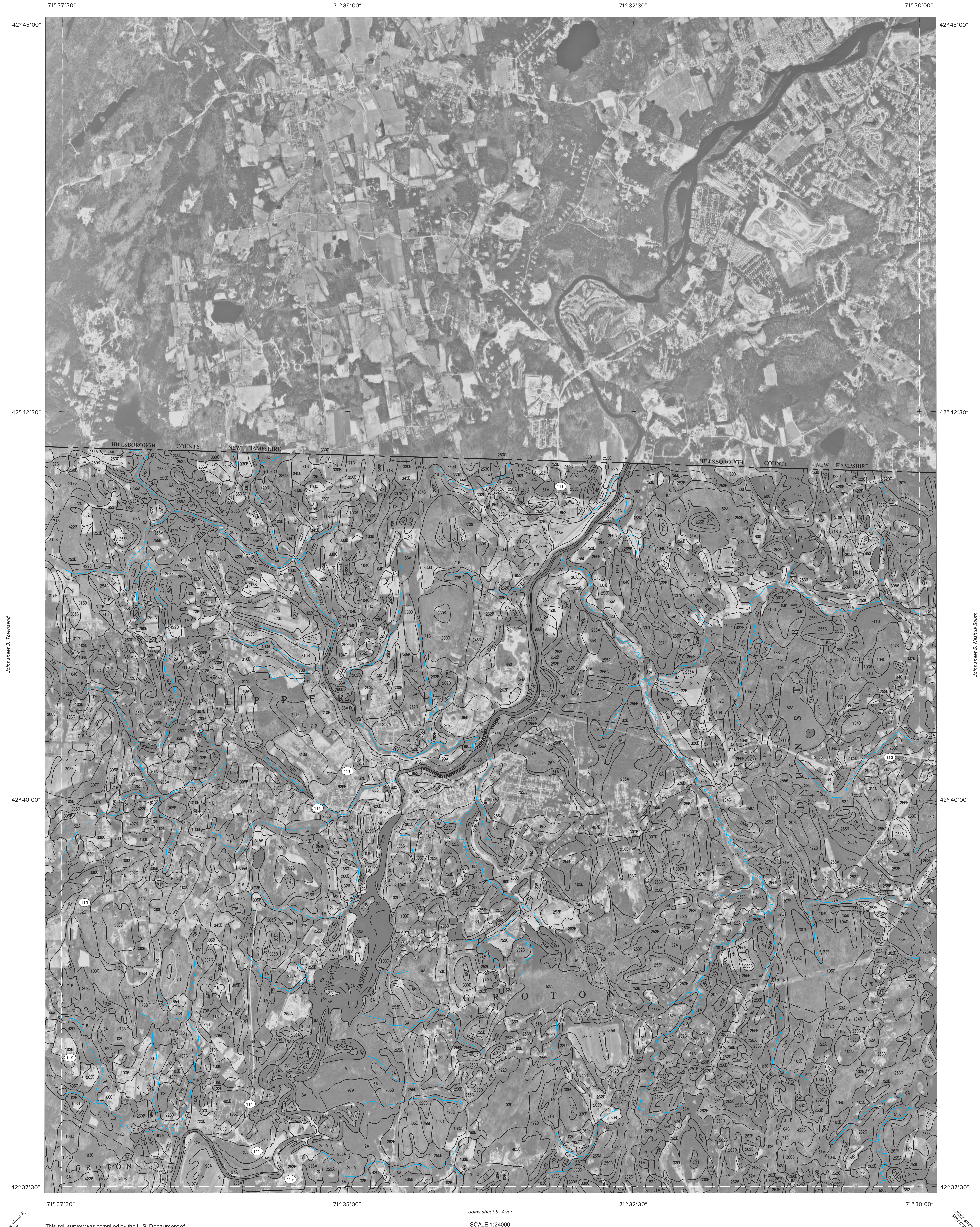

2
4
8
9
2 ASHBY
4 PEPPERELL
8 SHIRLEY
9 AYER
INDEX TO ADJOINING 7.5 MAPS

TOWNSEND, MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
PEPPERELL QUADRANGLE
SHEET NUMBER 4 OF 26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HILLSBOROUGH COUNTY NEW HAMPSHIRE
P E P P E R E L L
D U N S T A B L E
G R O T O N
NASHUA RIVER
NISSITISSIT
111
113
119
Joins sheet 3, Townsend
Joins sheet 5, Nashua South
Joins sheet 8, Shirley
Joins sheet 9, Ayer
Joins sheet 10, Westford

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.

QUADRANGLE LOCATION

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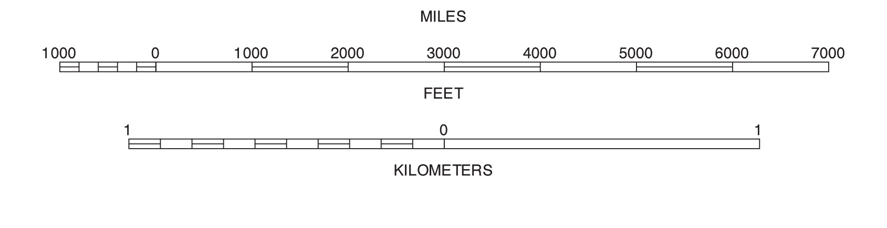
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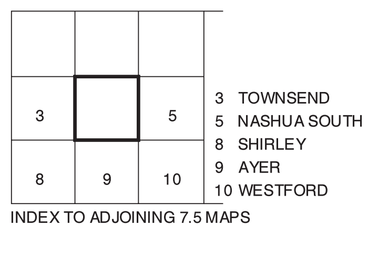

3 TOWNSEND
5 NASHUA SOUTH
8 SHIRLEY
9 AYER
10 WESTFORD

INDEX TO ADJOINING 7.5 MAPS

PEPPERELL, MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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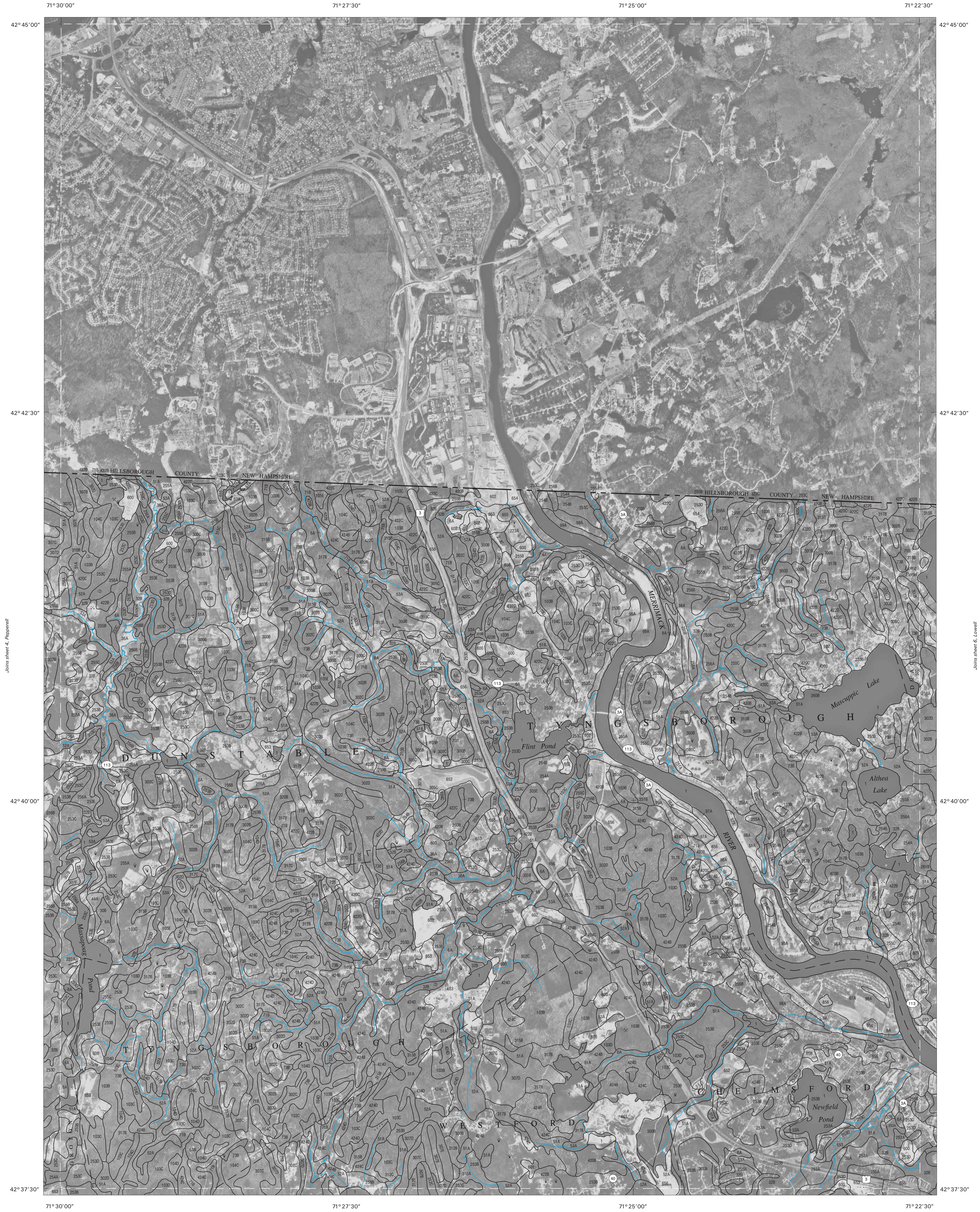
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
NASHUA SOUTH QUADRANGLE
SHEET NUMBER 5 OF 26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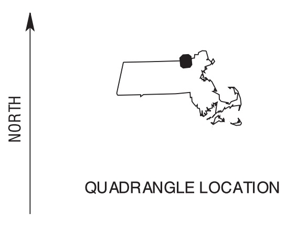
HILLSBOROUGH COUNTY NEW HAMPSHIRE
MERRIMACK RIVER
T Y N G S B O R O U G H
D U N S T A B L E
C H E L M S F O R D
W E S T F O R D
Flint Pond
Mascuppic Lake
Althea Lake
Long Pond
Massapoag Pond
Newfield Pond
3
3A
113
40
Joins sheet 4, Pepperell
Joins sheet 6, Lowell
Joins sheet 10, Westford
Joins sheet 9, Ayer
Joins sheet 11, Billerica

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



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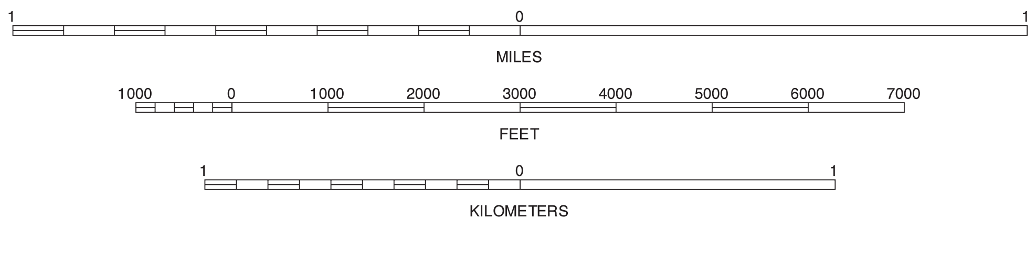
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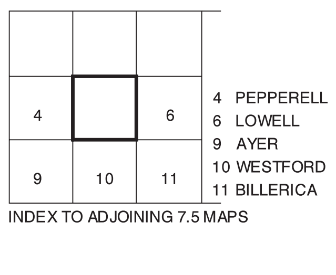

4 PEPPERELL
6 LOWELL
9 AYER
10 WESTFORD
11 BILLERICA

INDEX TO ADJOINING 7.5 MAPS

NASHUA SOUTH, MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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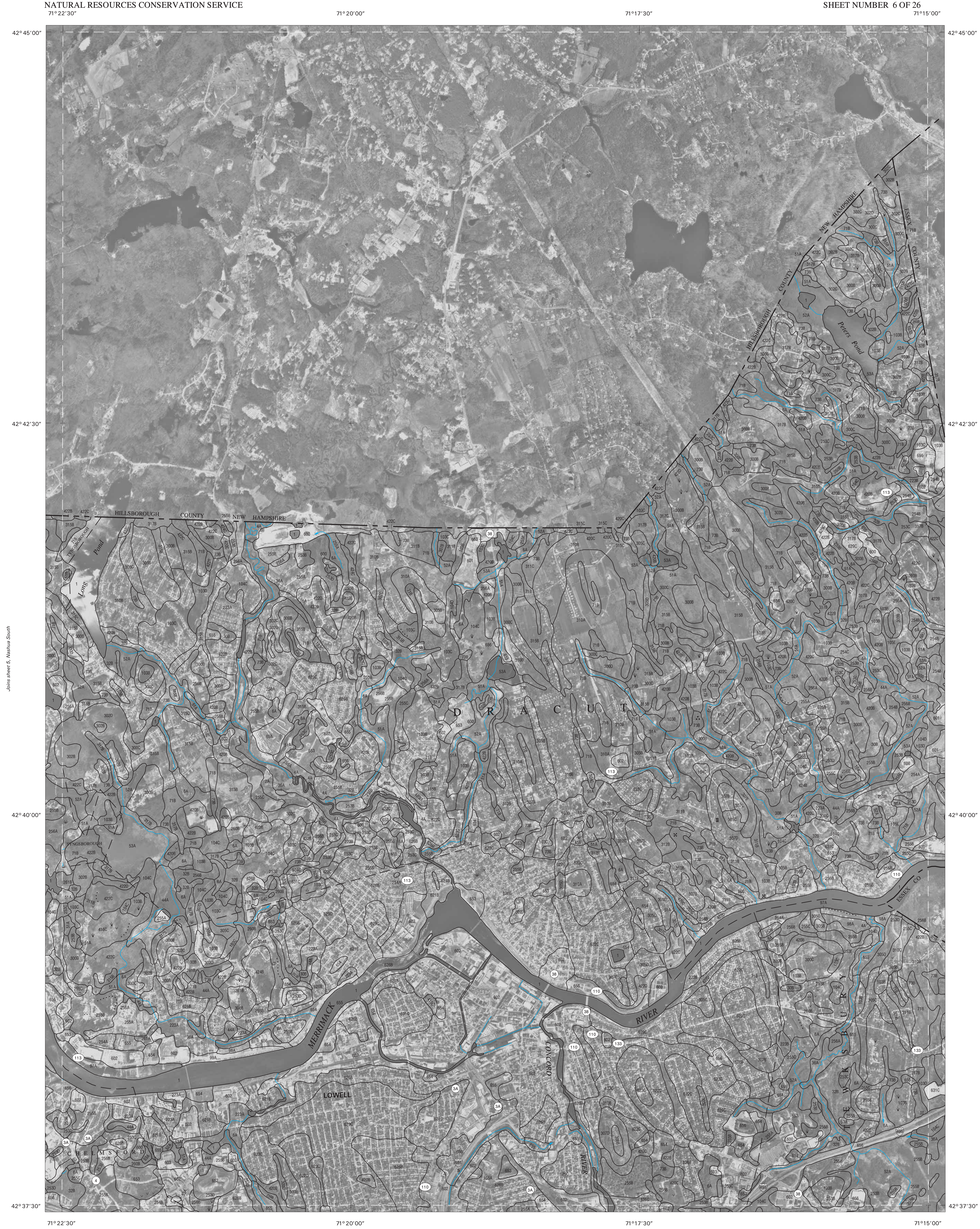
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
LOWELL QUADRANGLE
SHEET NUMBER 6 OF 26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HILLSBOROUGH COUNTY NEW HAMPSHIRE
ESSEX COUNTY
Peters Pond
Long Pond
TYNGSBOROUGH
D R A C U T
MERRIMACK RIVER
CONCORD RIVER
LOWELL
CHELMSFORD
TEWKSBURY
ESSEX CO

Joins sheet 5, Nashua South

Joins sheet 7, Lawrence

Joins sheet 10, Westford

Joins sheet 11, Billerica

Joins sheet 12, Wilmington

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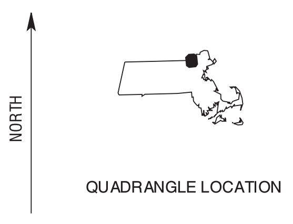

QUADRANGLE LOCATION

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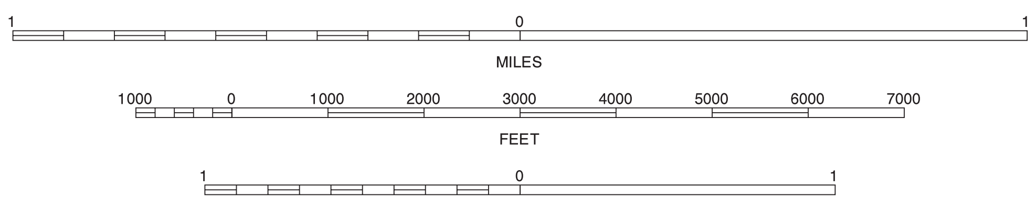
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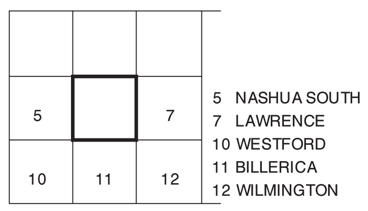

5 NASHUA SOUTH
7 LAWRENCE
10 WESTFORD
11 BILLERICA
12 WILMINGTON

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LOWELL, MASSACHUSETTS

7.5 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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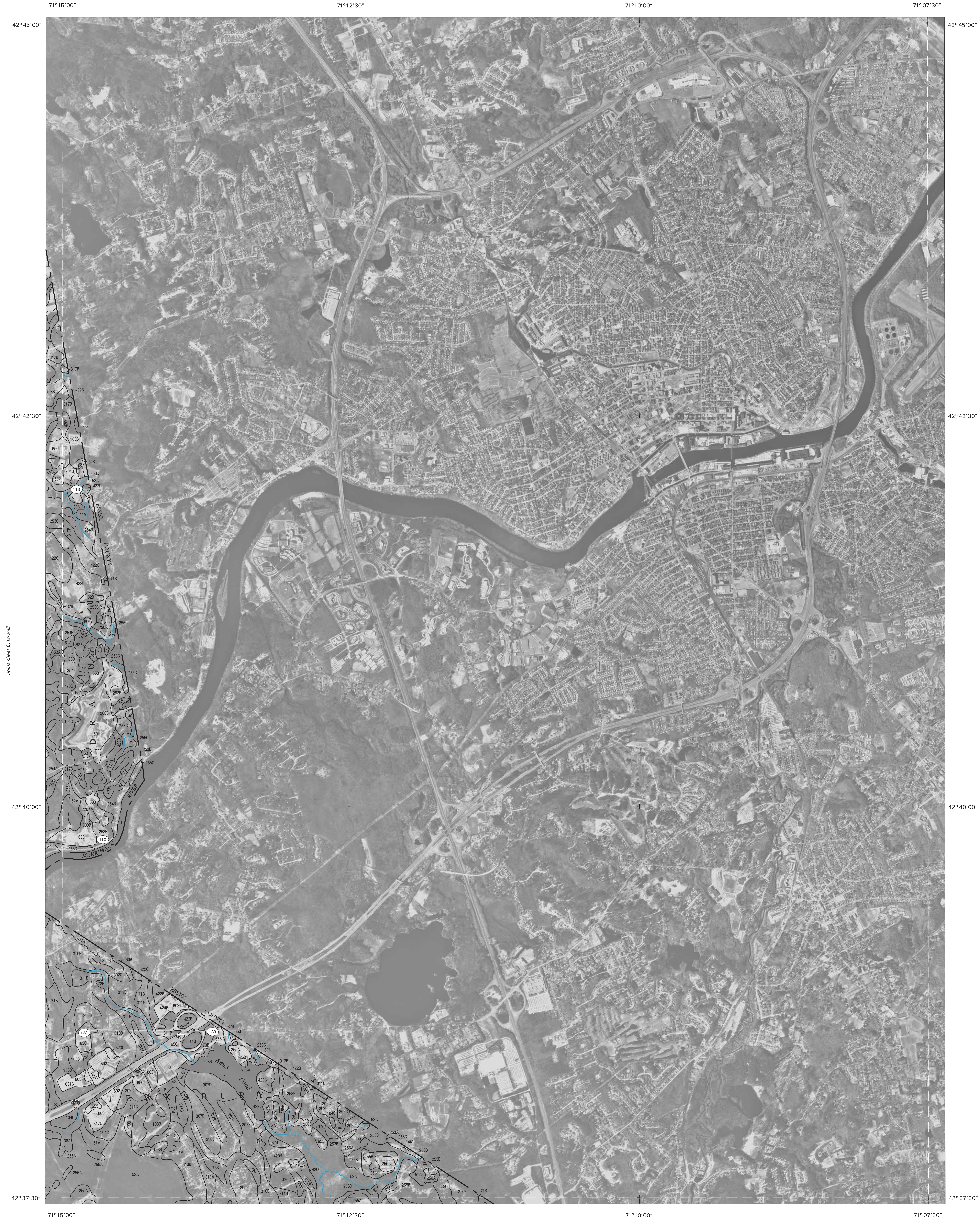
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
LAWRENCE QUADRANGLE
SHEET NUMBER 7 OF 26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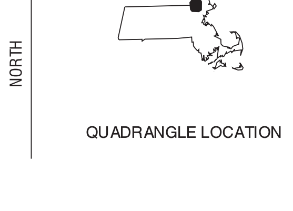
Joins sheet 6, Lowell
ESSEX COUNTY
DRACUT
MERRIMACK RIVER
113
110
133
TEWKSBURY
Ames Pond
Joins sheet 12, Wilmington

Joins sheet 11, Billerica

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.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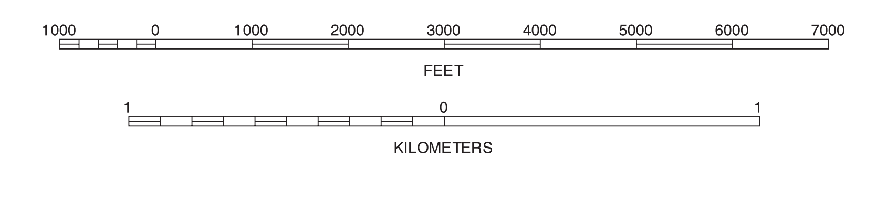
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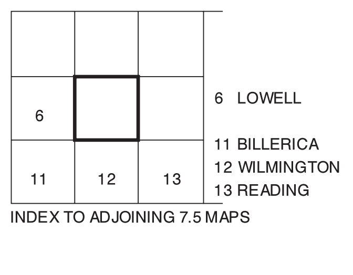
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6 LOWELL
11 BILLERICA
12 WILMINGTON
13 READING
INDEX TO ADJOINING 7.5 MAPS

LAWRENCE, MASSACHUSETTS
7.5 MINUTE SERIES
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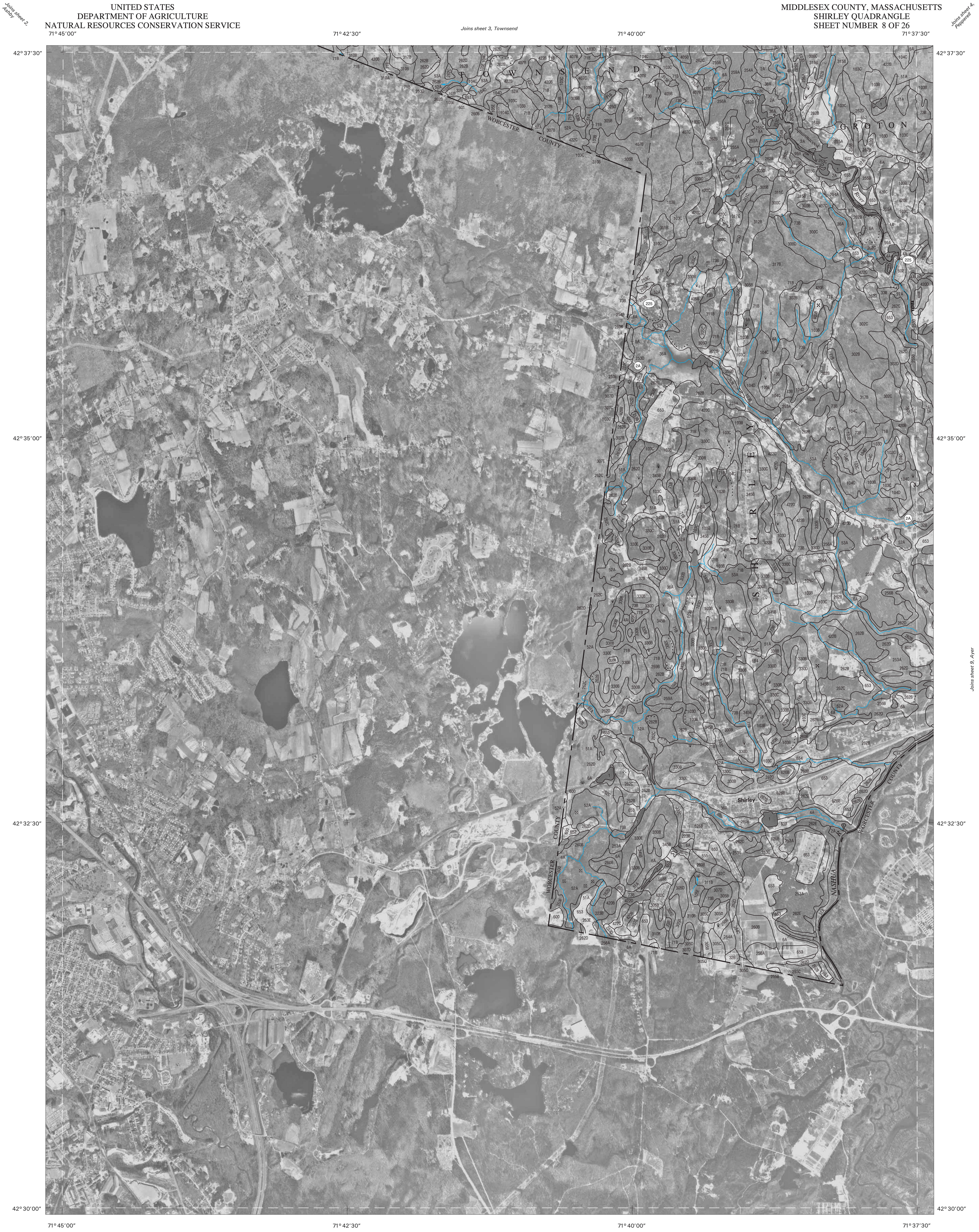
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 13, Reading

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
SHIRLEY QUADRANGLE
SHEET NUMBER 8 OF 26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Joins sheet 4, Pepperell
Joins sheet 9, Ayer
Joins sheet 14, Hudson
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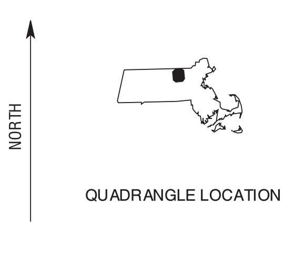
42° 35′00″
42° 32′30″
42° 30′00″
TOWNSEND
GROTON
SHIRLEY
WORCESTER COUNTY
Shirley
River
NASHUA
225
2A

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.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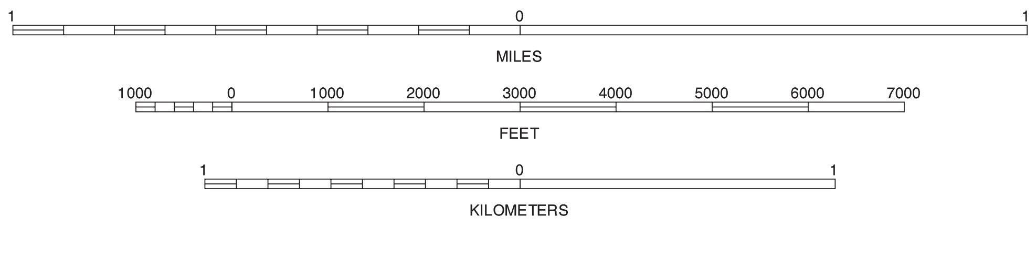
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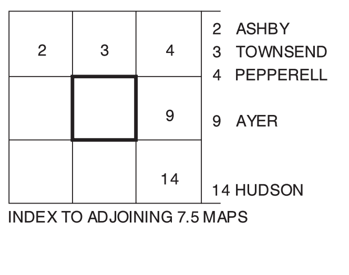
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14
2 ASHBY
3 TOWNSEND
4 PEPPERELL
9 AYER
14 HUDSON
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SHIRLEY, MASSACHUSETTS
7.5 MINUTE SERIES
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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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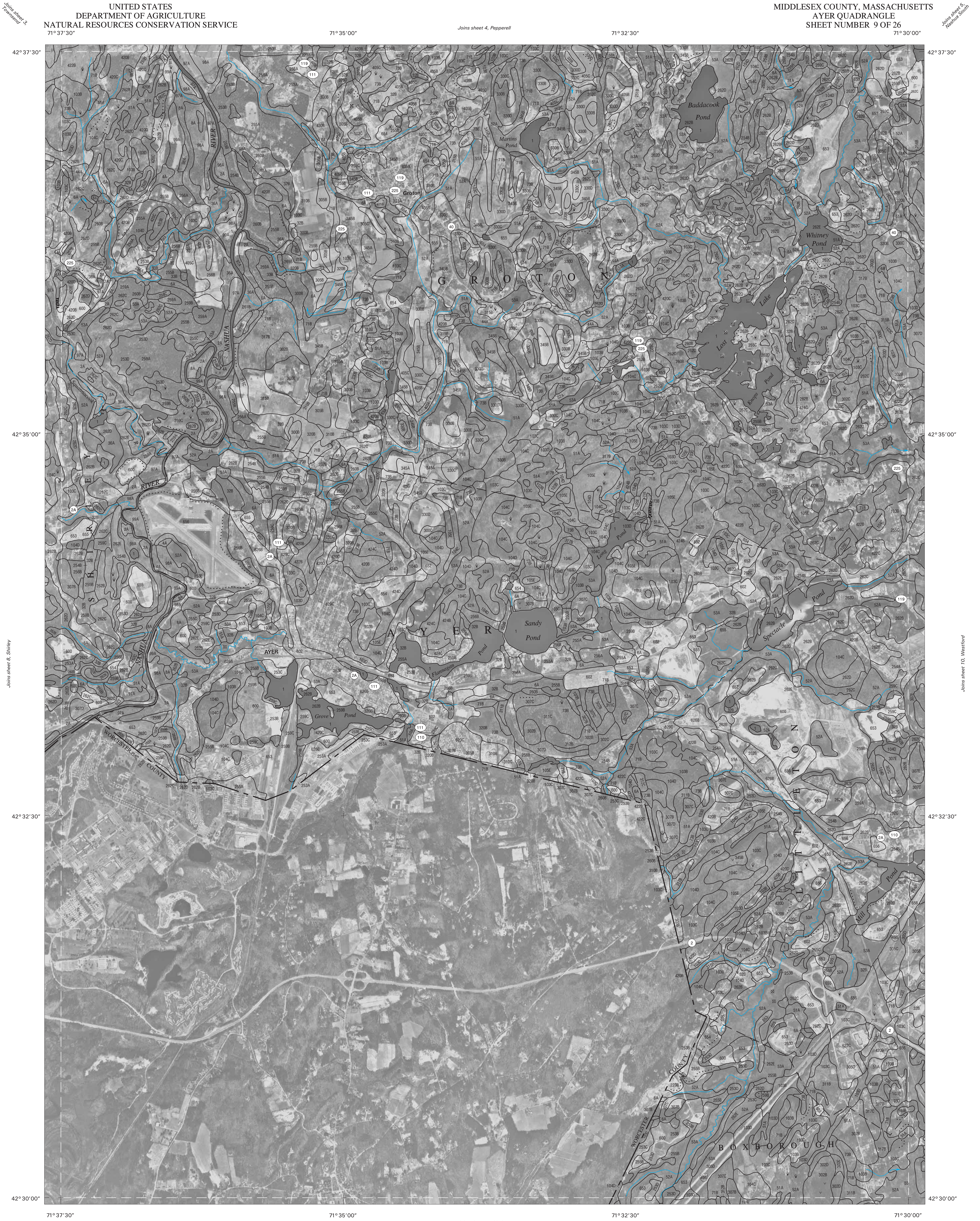
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
AYER QUADRANGLE
SHEET NUMBER 9 OF 26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Joins sheet 10, Westford
Joins sheet 14, Hudson
Joins sheet 15, Maynard
G R O T O N
Groton
Baddacook Pond
Martins Pond
Whitney Pond
Lost Lake
Knops Pond
Long Pond
Sandy Pond
Flannagan Pond
Grove Pond
Spectacle Pond
Mill Pond
NASHUA RIVER
A Y E R
AYER
WORCESTER COUNTY
B O X B O R O U G H
L I T T L E T O N

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.

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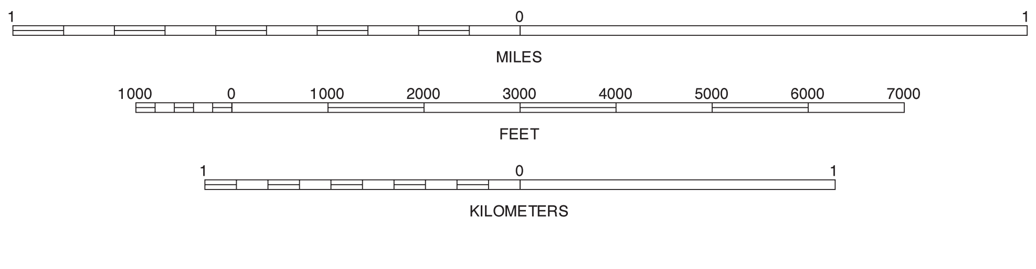
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KILOMETERS

3	4	5
8		10
	14	15

3 TOWNSEND
4 PEPPERELL
5 NASHUA SOUTH
8 SHIRLEY
10 WESTFORD
14 HUDSON
15 MAYNARD

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AYER, MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 26

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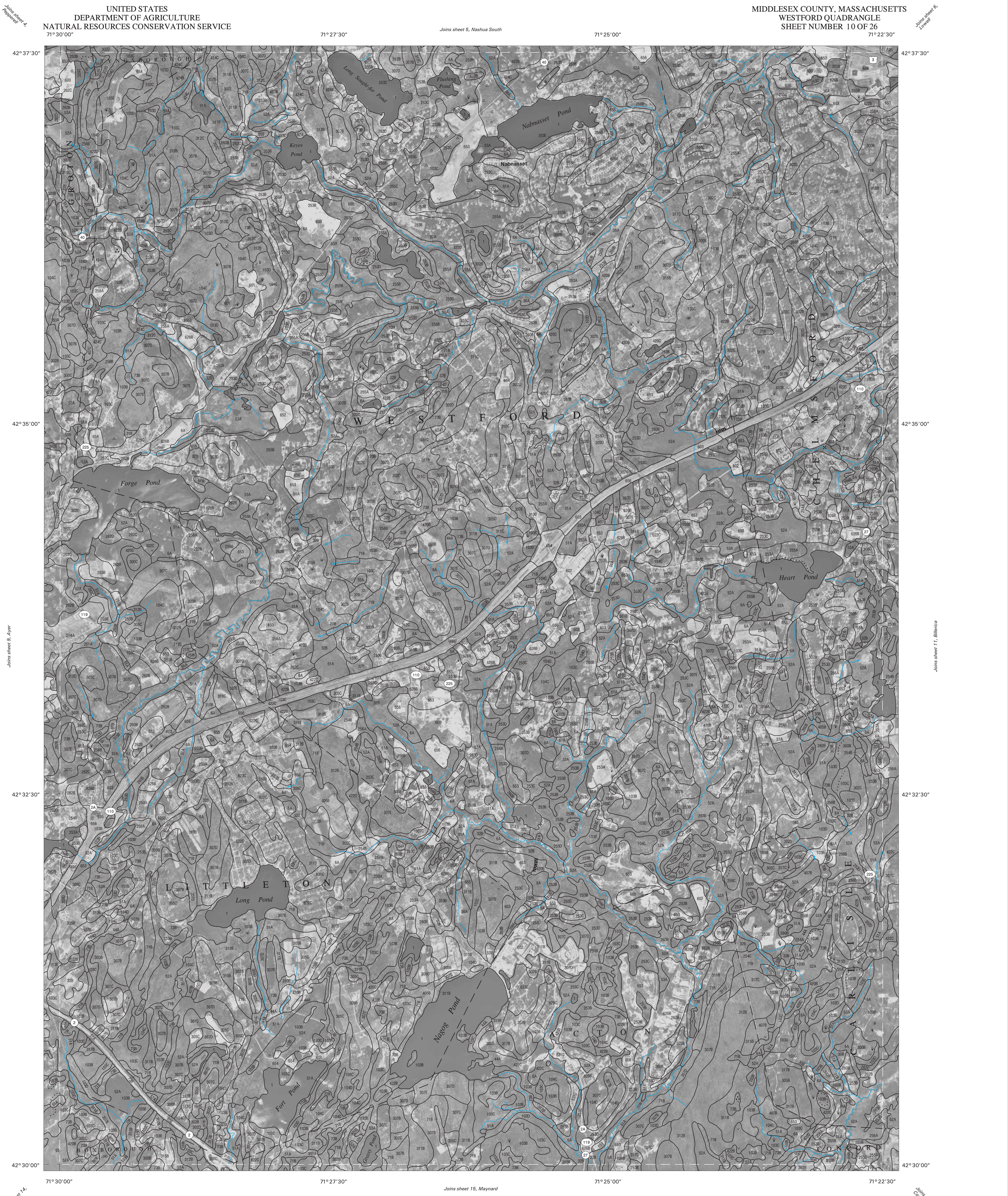
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
WESTFORD QUADRANGLE
SHEET NUMBER 10 OF 26



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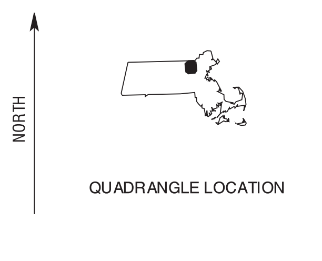
42° 30′00″
Joins sheet 9, Ayer
Joins sheet 11, Billerica
Joins sheet 14, Hudson
Joins sheet 15, Maynard
Joins sheet 16, Concord
TYNGSBOROUGH
GROTON
WESTFORD
CHELMSFORD
LITTLETON
ACTON
CARLISLE
BOXBOROUGH
CONCORD
Long Sought-for Pond
Flushing Pond
Nabnasset Pond
Nabnasset
Keyes Pond
Forge Pond
Heart Pond
Long Pond
Nagog Pond
Fort Pond
Grassy Pond

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



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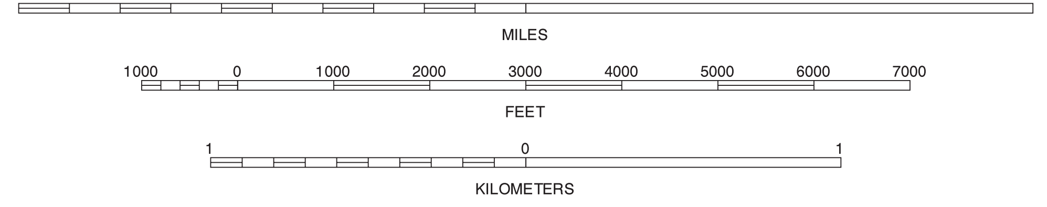

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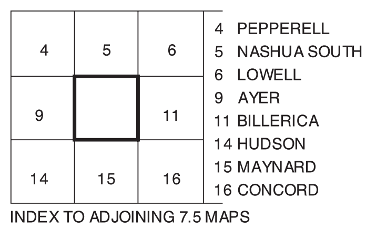

4
5
6
9
11
14
15
16

- 4 PEPPERELL
- 5 NASHUA SOUTH
- 6 LOWELL
- 9 AYER
- 11 BILLERICA
- 14 HUDSON
- 15 MAYNARD
- 16 CONCORD

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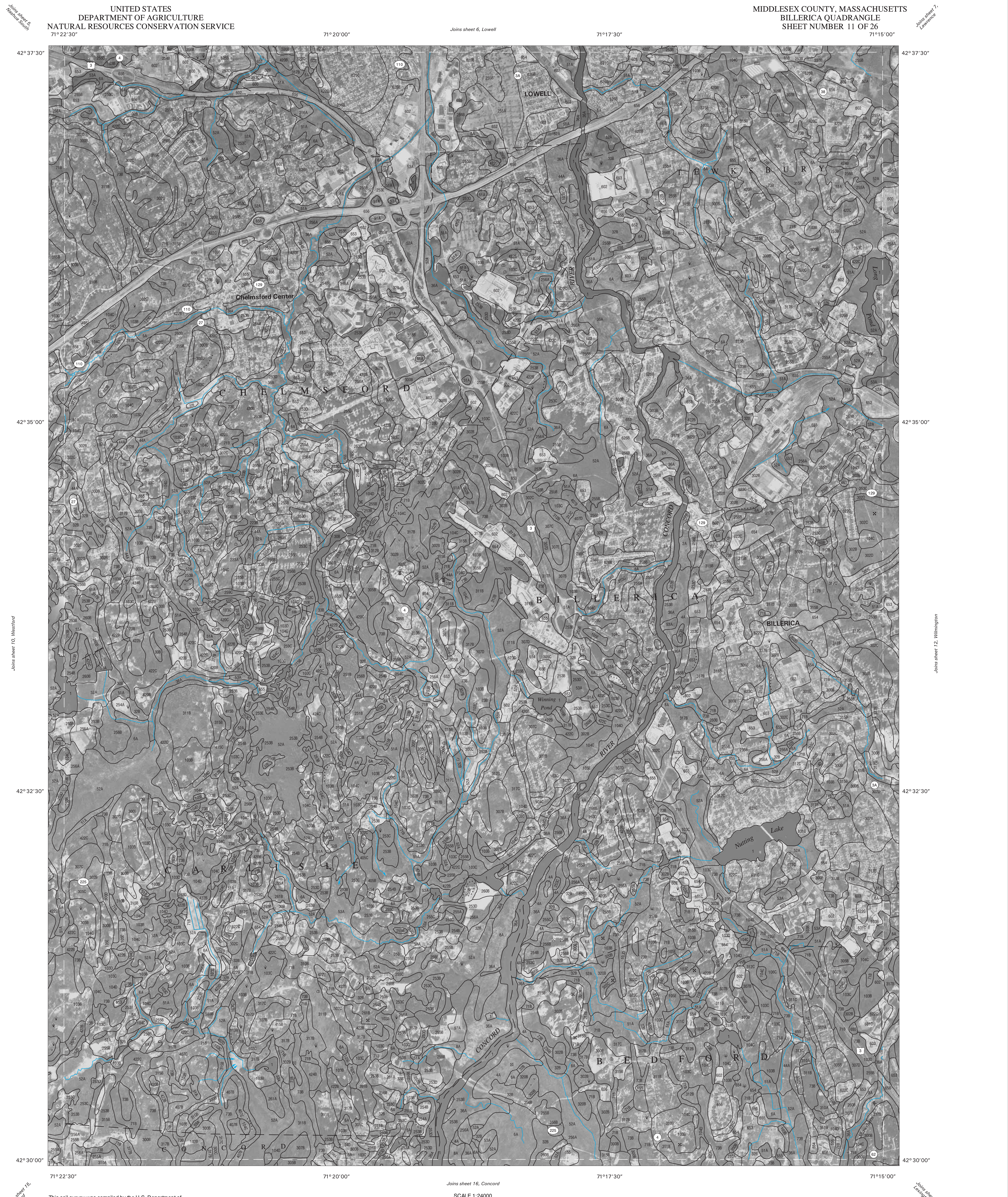
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
BILLERICA QUADRANGLE
SHEET NUMBER 11 OF 26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Joins sheet 6, Lowell
Joins sheet 7, Lawrence
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71° 17′30″
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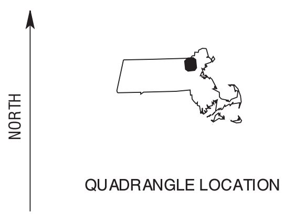
42° 37′30″
42° 35′00″
42° 32′30″
42° 30′00″
Joins sheet 10, Westford
Joins sheet 12, Wilmington
LOWELL
T E W K S B U R Y
Chelmsford Center
C H E L M S F O R D
Long Pond
RIVER
CONCORD
B I L L E R I C A
BILLERICA
Winning Pond
Nutting Lake
C A R L I S L E
B E D F O R D
C O N C O R D
Joins sheet 15, Maynard
Joins sheet 16, Concord
Joins sheet 17, Lexington

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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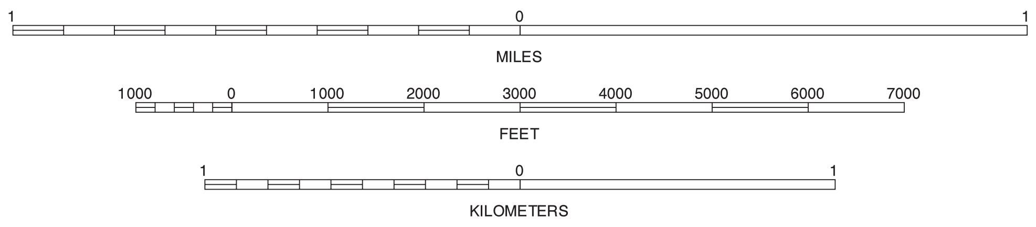
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7000
FEET
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0
1
KILOMETERS

5	6	7
10		12
15	16	17

5 NASHUA SOUTH
6 LOWELL
7 LAWRENCE
10 WESTFORD
12 WILMINGTON
15 MAYNARD
16 CONCORD
17 LEXINGTON

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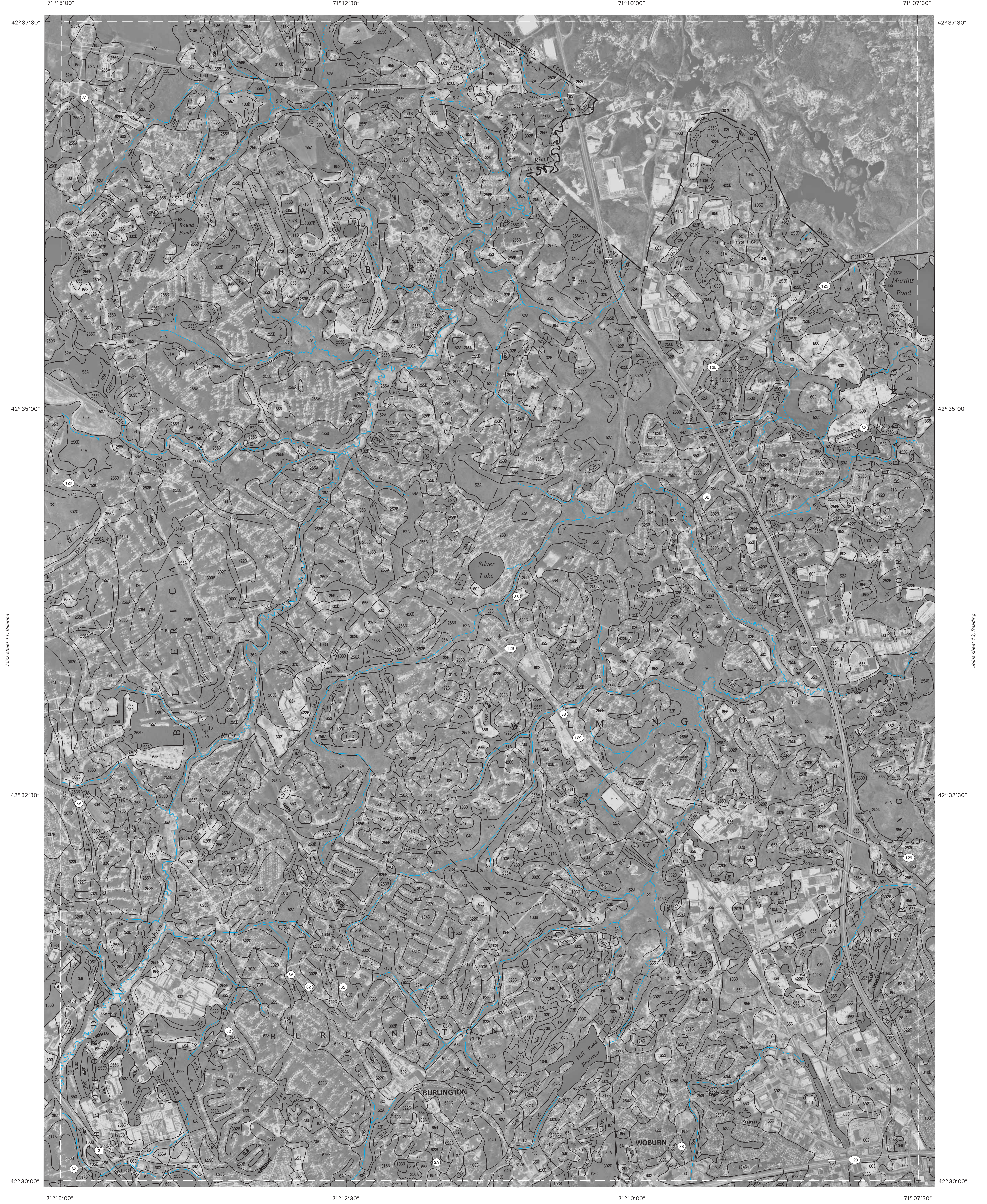
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 6, Lowell

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
WILMINGTON QUADRANGLE
SHEET NUMBER 12 OF 26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71°07′30″
42°37′30″
42°35′00″
42°32′30″
42°30′00″
Joins sheet 11, Billerica
Joins sheet 13, Reading
Joins sheet 17, Lexington
TEWKSBURY
BILLERICA
WILMINGTON
BURLINGTON
BEDFORD
NORTH READING
BURLINGTON
WOBURN
ESSEX COUNTY
Round Pond
Long Pond
Martins Pond
Silver Lake
Mill Pond Reservoir
Shawsheen River
River
38
62
125
129
3A
3
95
128

Joins sheet 16, Concord

Joins sheet 18, Boston North

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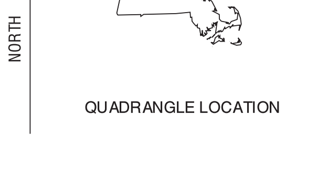

QUADRANGLE LOCATION

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FEET

1 0 1
KILOMETERS

6	7	
11		13
16	17	18

6 LOWELL
7 LAWRENCE
11 BILLERICA
13 READING
16 CONCORD
17 LEXINGTON
18 BOSTON NORTH

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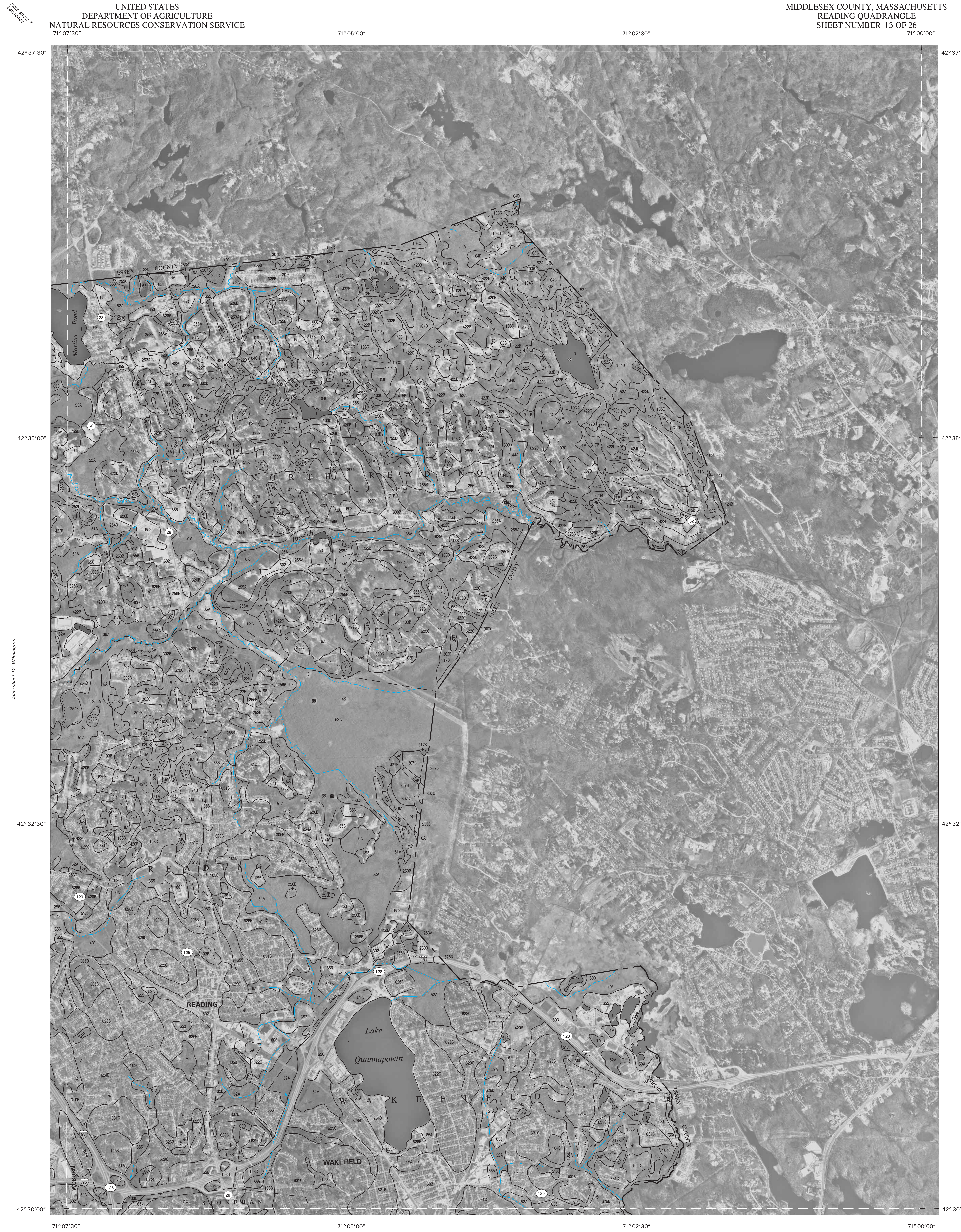
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
READING QUADRANGLE
SHEET NUMBER 13 OF 26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42° 35′00″
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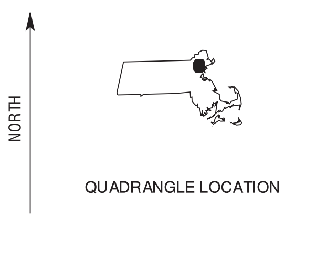
42° 30′00″
Joins sheet 12, Wilmington
Joins sheet 17, Lexington
Joins sheet 18, Boston North
ESSEX COUNTY
Martins Pond
NORTH READING
Ipswich
READING
Lake Quannapowitt
WAKEFIELD
STONEHAM
WOBURN
Saugus R.
28
62
129
128
95

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.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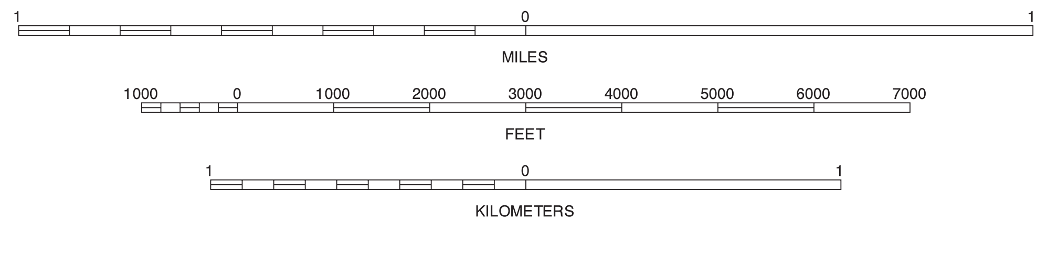
QUADRANGLE LOCATION

SCALE 1:24000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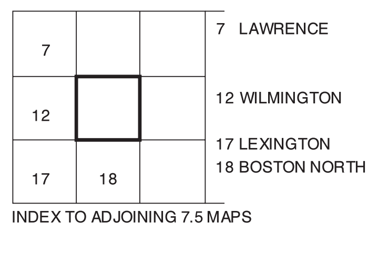
7
12
17
18
7 LAWRENCE
12 WILMINGTON
17 LEXINGTON
18 BOSTON NORTH
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READING, MASSACHUSETTS
7.5 MINUTE SERIES
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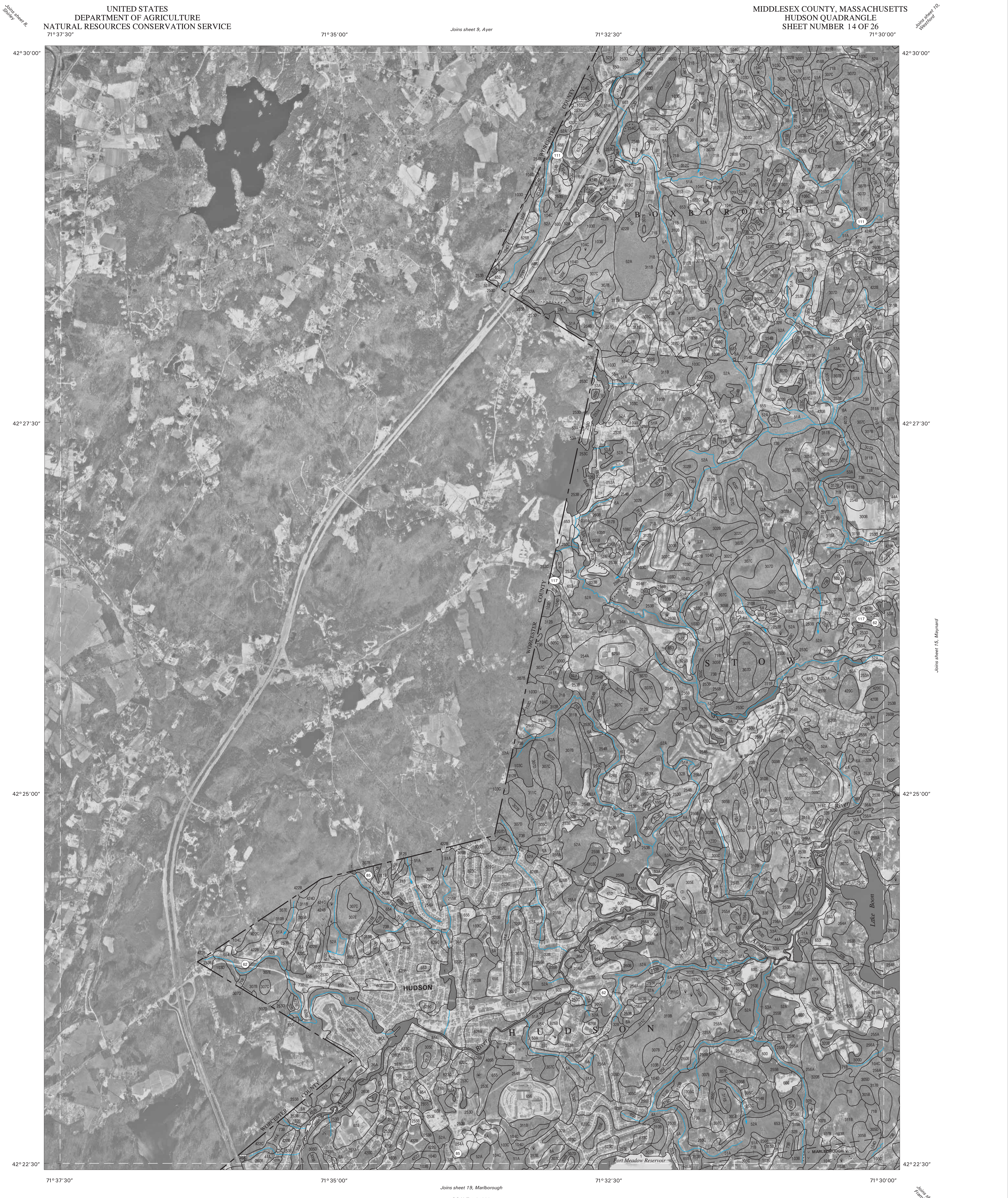
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
HUDSON QUADRANGLE
SHEET NUMBER 14 OF 26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Joins sheet 9, Ayer
Joins sheet 10, Westford
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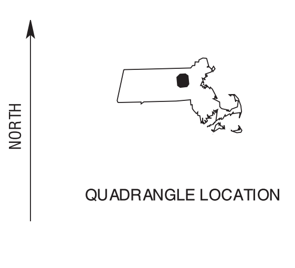
42° 30′00″
42° 27′30″
42° 25′00″
42° 22′30″
Joins sheet 15, Maynard
Joins sheet 19, Marlborough
Joins sheet 20, Framingham
WORCESTER COUNTY
B O X B O R O U G H
S T O W
H U D S O N
HUDSON
MARLBOROUGH
Lake Boon
Fort Meadow Reservoir
Assabet River
111
117
62
85
495

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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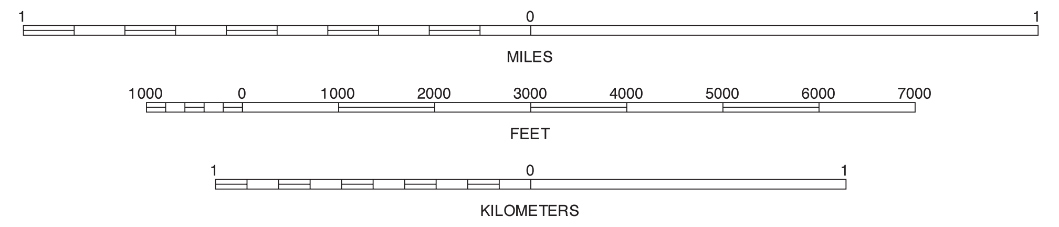
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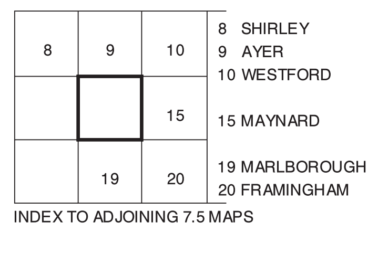
8
9
10
15
19
20

8 SHIRLEY
9 AYER
10 WESTFORD
15 MAYNARD
19 MARLBOROUGH
20 FRAMINGHAM

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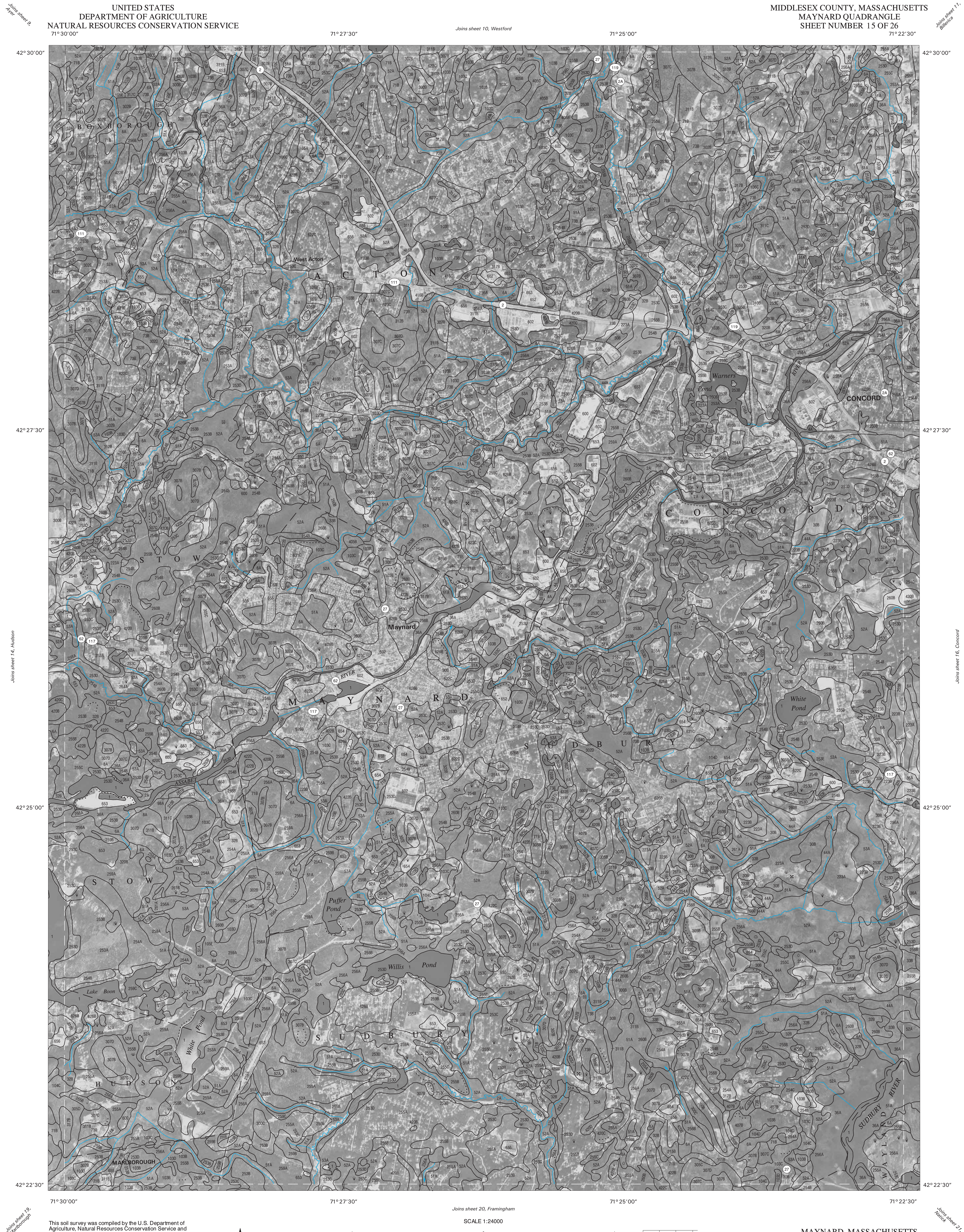
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
MAYNARD QUADRANGLE
SHEET NUMBER 15 OF 26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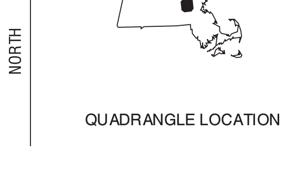
Joins sheet 10, Westford
Joins sheet 11, Billerica
Joins sheet 14, Hudson
Joins sheet 16, Concord
Joins sheet 19, Marlborough
Joins sheet 20, Framingham
Joins sheet 21, Natick
71° 30′00″
71° 27′30″
71° 25′00″
71° 22′30″
42° 30′00″
42° 27′30″
42° 25′00″
42° 22′30″
BOXBOROUGH
ACTON
West Acton
CONCORD
STOW
Maynard
MAYNARD
SUDBURY
HUDSON
MARLBOROUGH
WAYLAND
Warners Pond
White Pond
Puffer Pond
Willis Pond
Lake Boon
ASSABET RIVER
SUDBURY RIVER

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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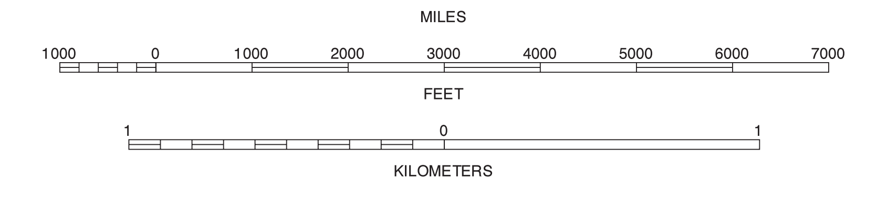
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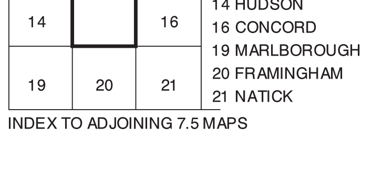
KILOMETERS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11
14
16
19
20
21

9 AYER
10 WESTFORD
11 BILLERICA
14 HUDSON
16 CONCORD
19 MARLBOROUGH
20 FRAMINGHAM
21 NATICK

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MIDDLESEX COUNTY, MASSACHUSETTS
CONCORD QUADRANGLE
SHEET NUMBER 16 OF 26

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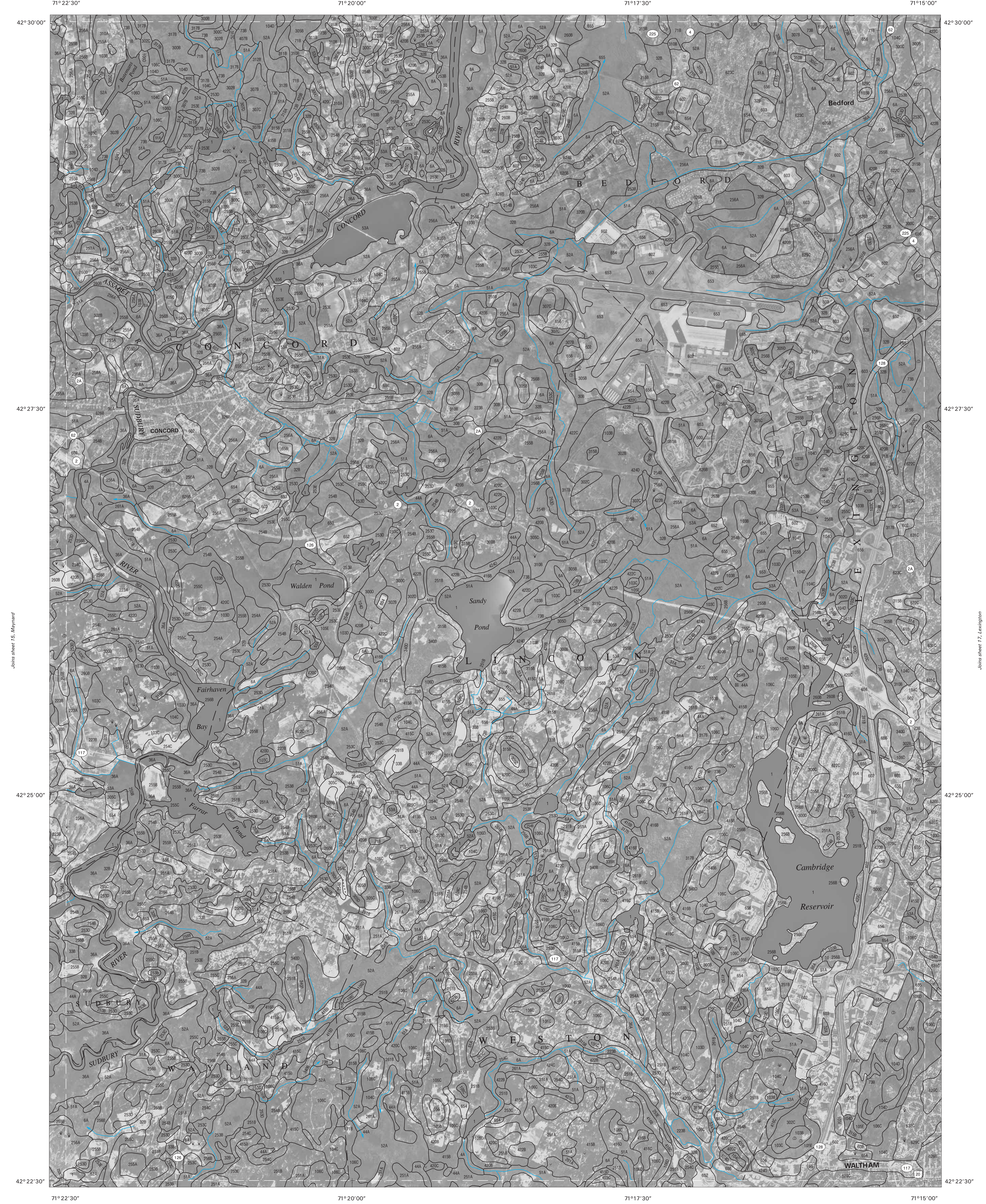
Joins sheet 12, Wilmington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42° 25′00″
42° 22′30″
Joins sheet 15, Maynard
Joins sheet 17, Lexington
Joins sheet 21, Natick
B E D F O R D
Bedford
C O N C O R D
CONCORD
CONCORD
ASSABET
RIVER
SUDBURY
RIVER
Walden Pond
Sandy Pond
L I N C O L N
L E X I N G T O N
Fairhaven Bay
Farrar Pond
Cambridge Reservoir
S U D B U R Y
W A Y L A N D
W E S T O N
WALTHAM

Joins sheet 20, Framingham

Joins sheet 22, Newton

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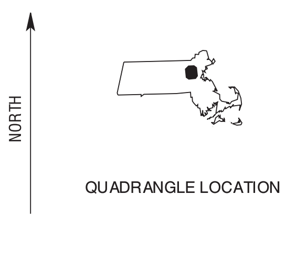

QUADRANGLE LOCATION

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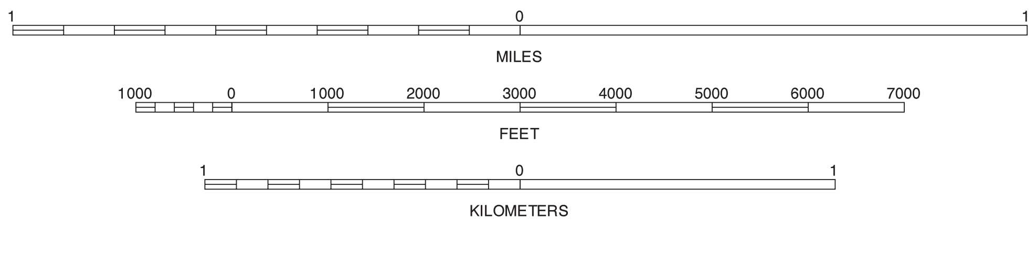
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FEET
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1
KILOMETERS

10	11	12
15		17
20	21	22

10 WESTFORD
11 BILLERICA
12 WILMINGTON
15 MAYNARD
17 LEXINGTON
20 FRAMINGHAM
21 NATICK
22 NEWTON

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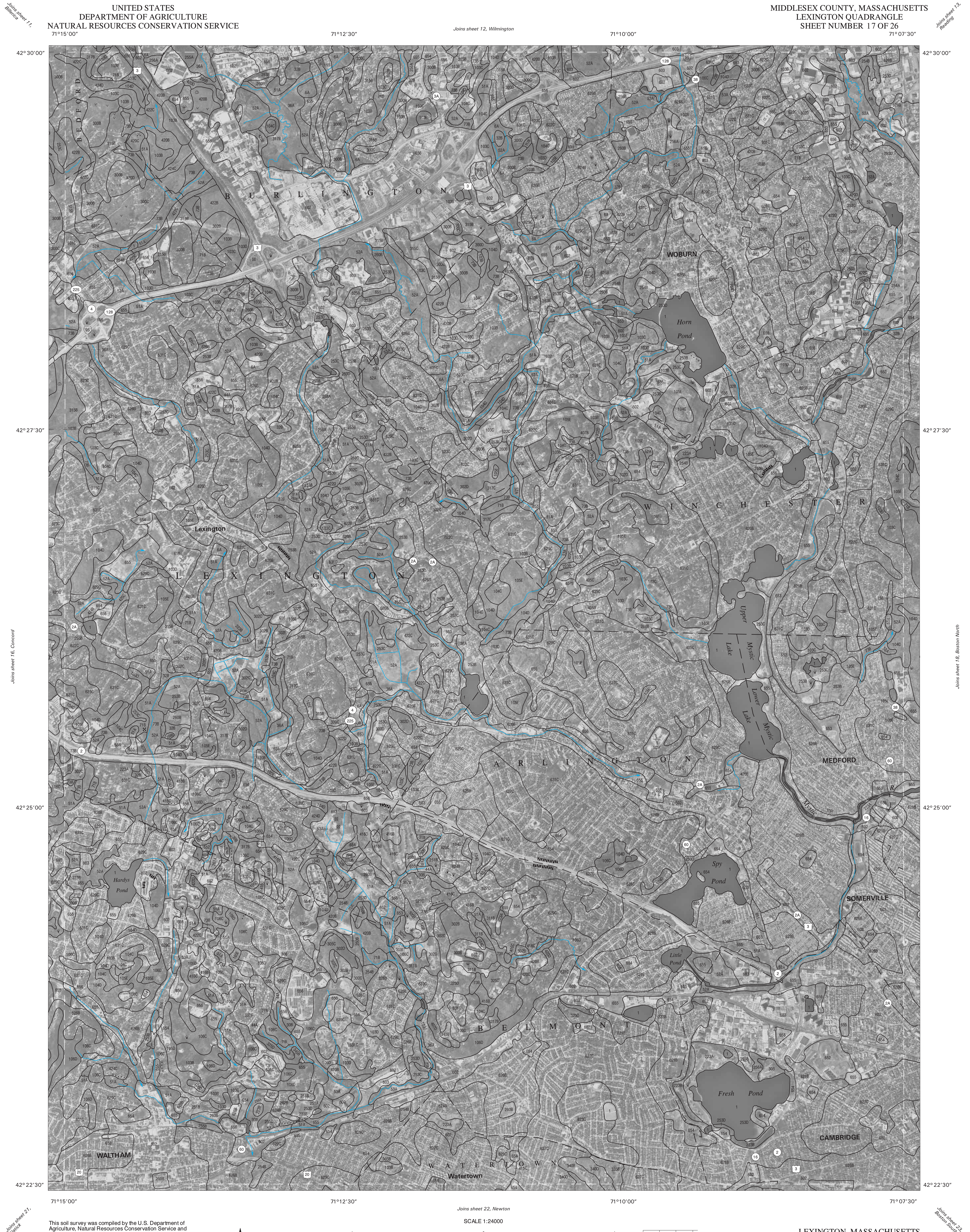
MIDDLESEX COUNTY, MASSACHUSETTS
LEXINGTON QUADRANGLE
SHEET NUMBER 17 OF 26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Joins sheet 12, Wilmington
Joins sheet 13, Reading
Joins sheet 16, Concord
Joins sheet 18, Boston North
Joins sheet 21, Natick
Joins sheet 22, Newton
Joins sheet 23, Boston South
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71°10′00″
71°07′30″
42°30′00″
42°27′30″
42°25′00″
42°22′30″
BEDFORD
BURLINGTON
WOBURN
Horn Pond
WINCHESTER
Lexington
LEXINGTON
Upper Mystic Lake
Lower Mystic Lake
ARLINGTON
MEDFORD
Mystic R
Spy Pond
SOMERVILLE
Hardys Pond
Little Pond
BELMONT
Fresh Pond
CAMBRIDGE
WALTHAM
WATERTOWN
Watertown

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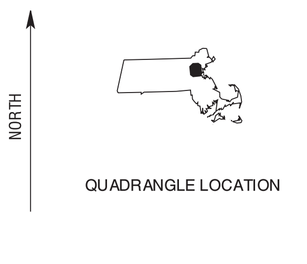
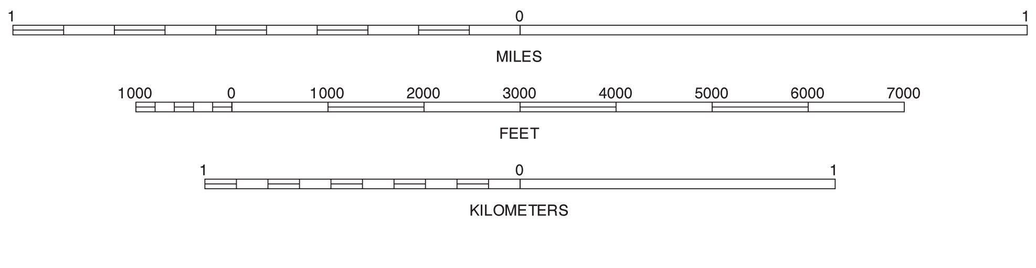

NORTH
QUADRANGLE LOCATION

SCALE 1:24000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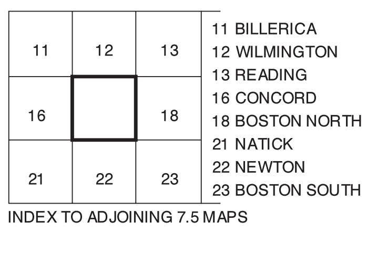
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12
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16
18
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22
23
11 BILLERICA
12 WILMINGTON
13 READING
16 CONCORD
18 BOSTON NORTH
21 NATICK
22 NEWTON
23 BOSTON SOUTH

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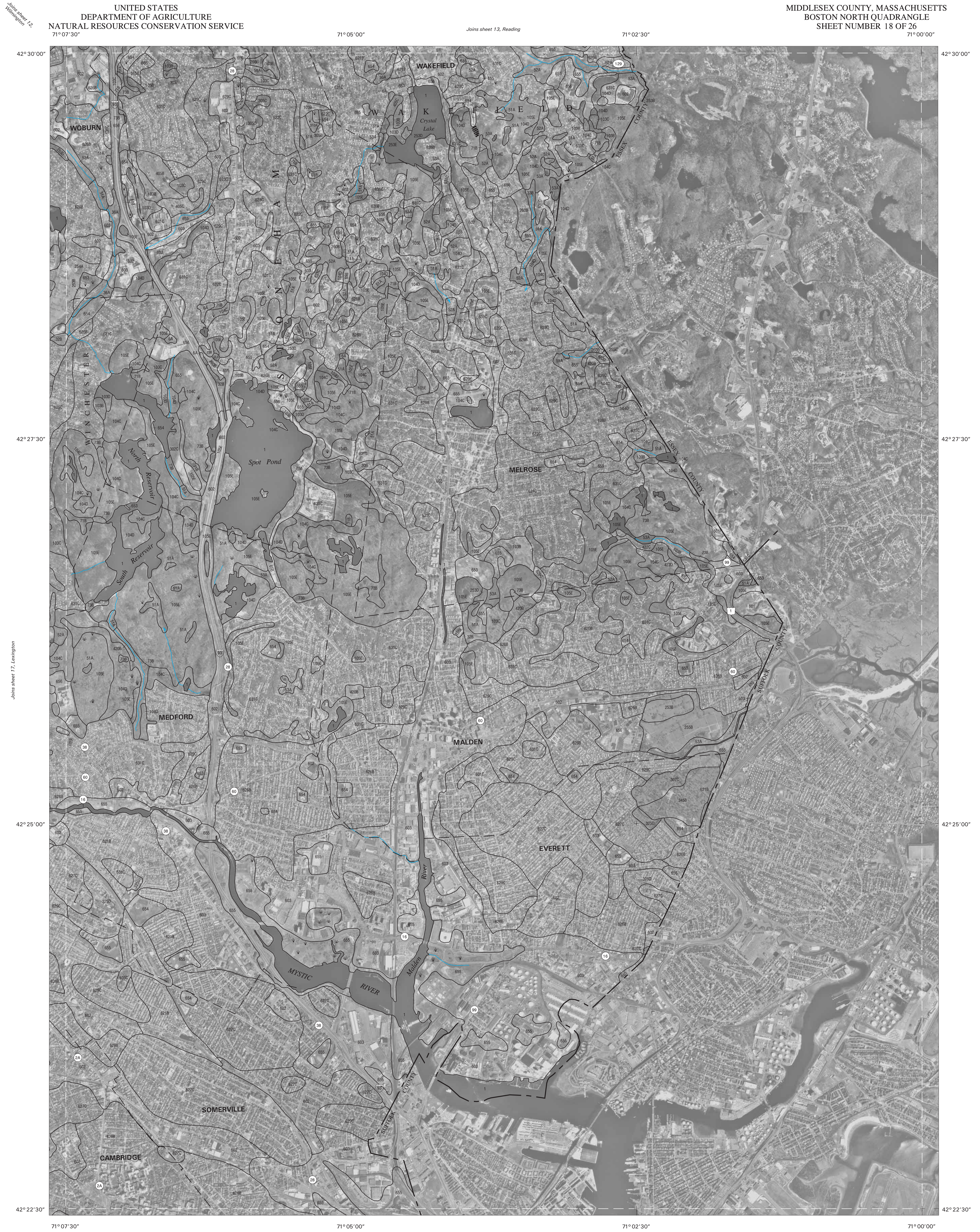
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
BOSTON NORTH QUADRANGLE
SHEET NUMBER 18 OF 26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Joins sheet 13, Reading
Joins sheet 17, Lexington
Joins sheet 22, Newton
Joins sheet 23, Boston South
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71° 00′00″
42° 30′00″
42° 27′30″
42° 25′00″
42° 22′30″
WOBURN
WAKEFIELD
W A K E F I E L D
Crystal Lake
S T O N E H A M
WINCHESTER
North Reservoir
South Reservoir
Spot Pond
MELROSE
ESSEX COUNTY
MEDFORD
MALDEN
EVERETT
MYSTIC RIVER
Malden River
SUFFOLK COUNTY
SOMERVILLE
CAMBRIDGE

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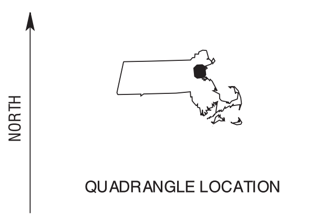
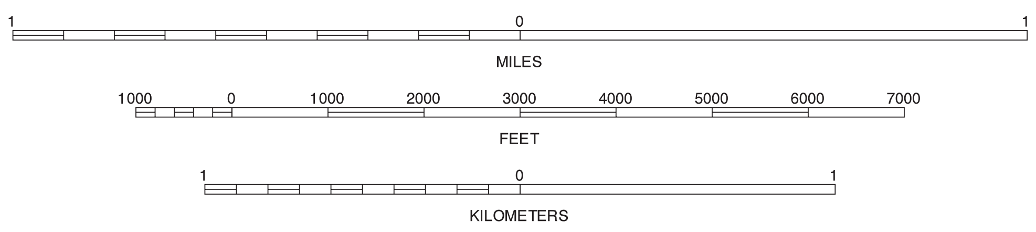

NORTH
QUADRANGLE LOCATION

SCALE 1:24000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FEET
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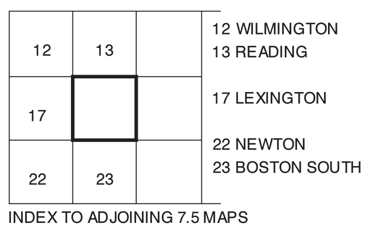
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22
23
12 WILMINGTON
13 READING
17 LEXINGTON
22 NEWTON
23 BOSTON SOUTH
INDEX TO ADJOINING 7.5 MAPS

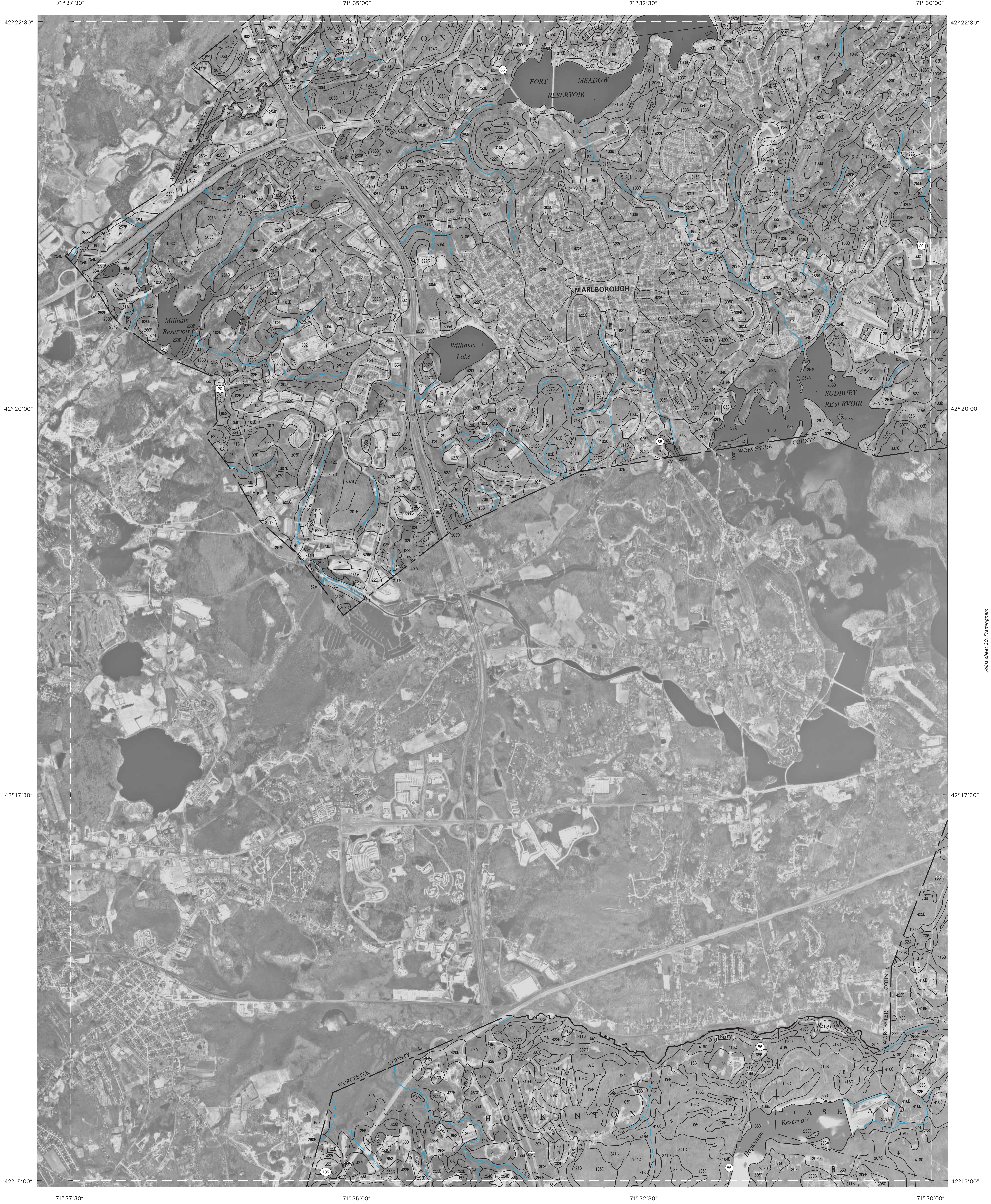
BOSTON NORTH, MASSACHUSETTS

7.5 MINUTE SERIES
SHEET NUMBER 18 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
MARLBOROUGH QUADRANGLE (OVERSIZED)
SHEET NUMBER 19 OF 26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Joins sheet 15, Maynard
Joins sheet 20, Framingham
Joins sheet 24, Milford
Joins sheet 25, Holliston
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42° 22′30″
42° 20′00″
42°17′30″
42°15′00″
HUDSON
FORT MEADOW RESERVOIR
MARLBOROUGH
Millham Reservoir
Williams Lake
SUDBURY RESERVOIR
WORCESTER COUNTY
HOPKINTON
ASHLAND
Hopkinton Reservoir
Sudbury River
85
20
135

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.

NORTH
QUADRANGLE LOCATION

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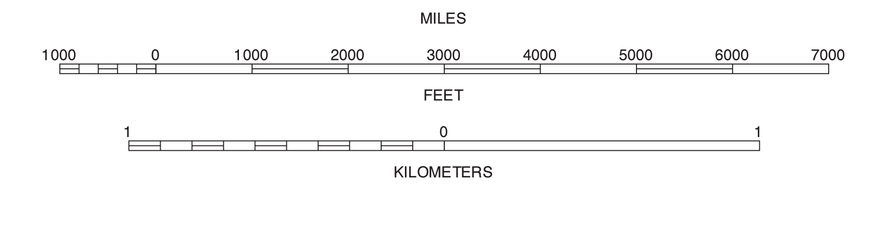
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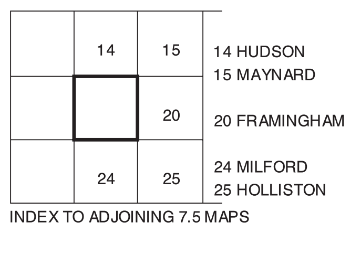
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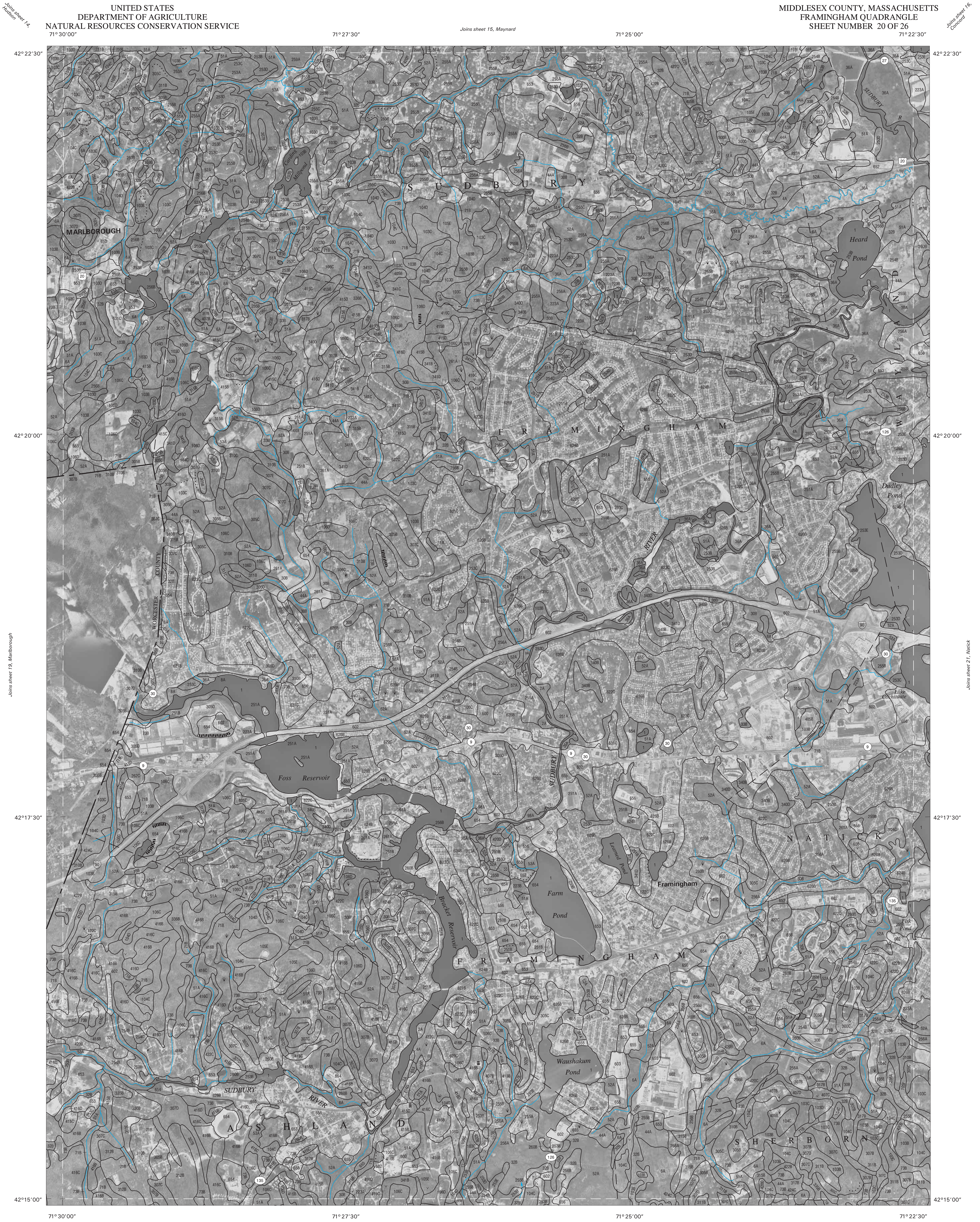
14 HUDSON
15 MAYNARD
20 FRAMINGHAM
24 MILFORD
25 HOLLISTON
INDEX TO ADJOINING 7.5 MAPS

MARLBOROUGH, (OVERSIZED) MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
FRAMINGHAM QUADRANGLE
SHEET NUMBER 20 OF 26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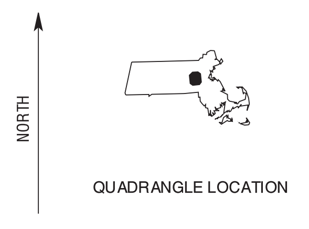
42° 17′30″
42° 15′00″
Joins sheet 19, Marlborough
Joins sheet 21, Natick
Joins sheet 24, Milford
Joins sheet 25, Holliston
Joins sheet 26, Medfield
SUDBURY
MARLBOROUGH
FRAMINGHAM
Heard Pond
Dudley Pond
SUDBURY R
RIVER
WORCESTER COUNTY
Foss Reservoir
Farm Pond
Learned Pond
Bracket Reservoir
Lake Cochituate
Framingham
Waushakum Pond
NATICK
SUDBURY RIVER
ASHLAND
SHERBORN

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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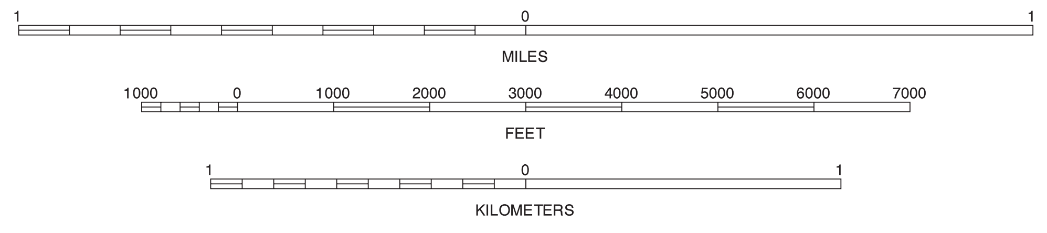
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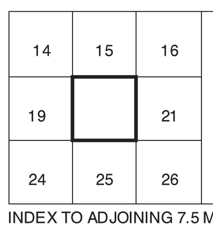
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21
24
25
26

14 HUDSON
15 MAYNARD
16 CONCORD
19 MARLBOROUGH
21 NATICK
24 MILFORD
25 HOLLISTON
26 MEDFIELD

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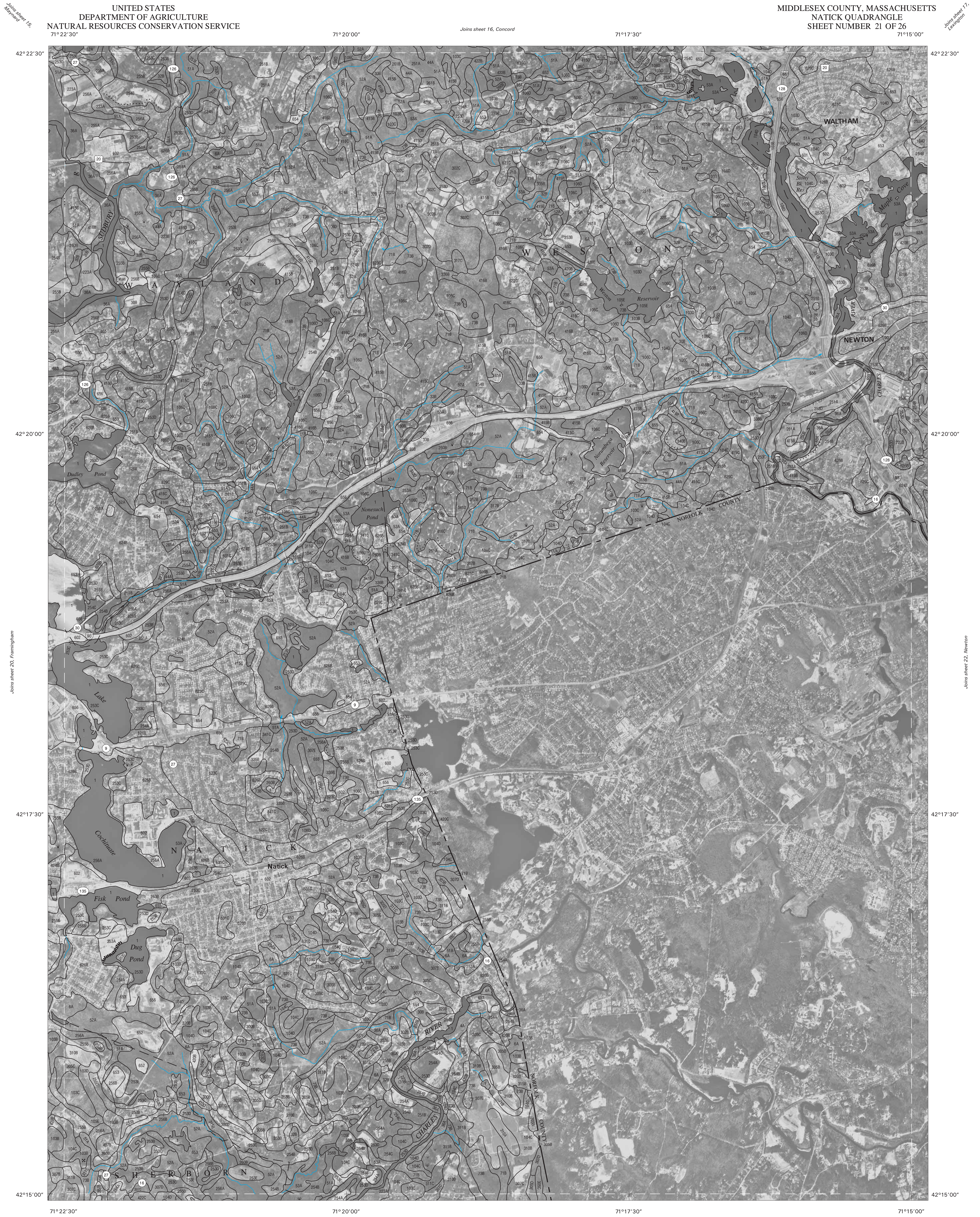
FRAMINGHAM, MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 20 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
NATICK QUADRANGLE
SHEET NUMBER 21 OF 26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Joins sheet 17, Lexington
Joins sheet 20, Framingham
Joins sheet 22, Newton
Joins sheet 25, Holliston
Joins sheet 26, Medfield
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71° 20′00″
71°17′30″
71°15′00″
42° 22′30″
42° 20′00″
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42°15′00″
WALTHAM
WESTON
WAYLAND
NEWTON
NATICK
Natick
SHERBORN
SUDBURY RIVER
CHARLES RIVER
NORFOLK COUNTY
Dudley Pond
Nonesuch Pond
Weston Reservoir
Norumbega Reservoir
Stony Brook Reservoir
Lake Cochituate
Fisk Pond
Dug Pond

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.

NORTH
QUADRANGLE LOCATION

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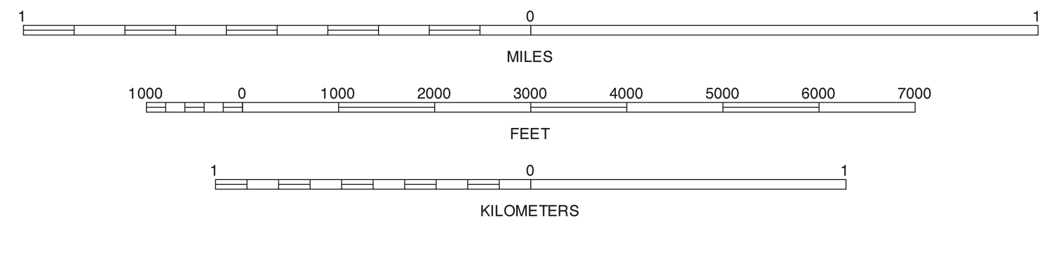
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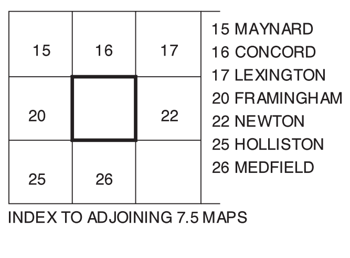
15
16
17
20
22
25
26

15 MAYNARD
16 CONCORD
17 LEXINGTON
20 FRAMINGHAM
22 NEWTON
25 HOLLISTON
26 MEDFIELD

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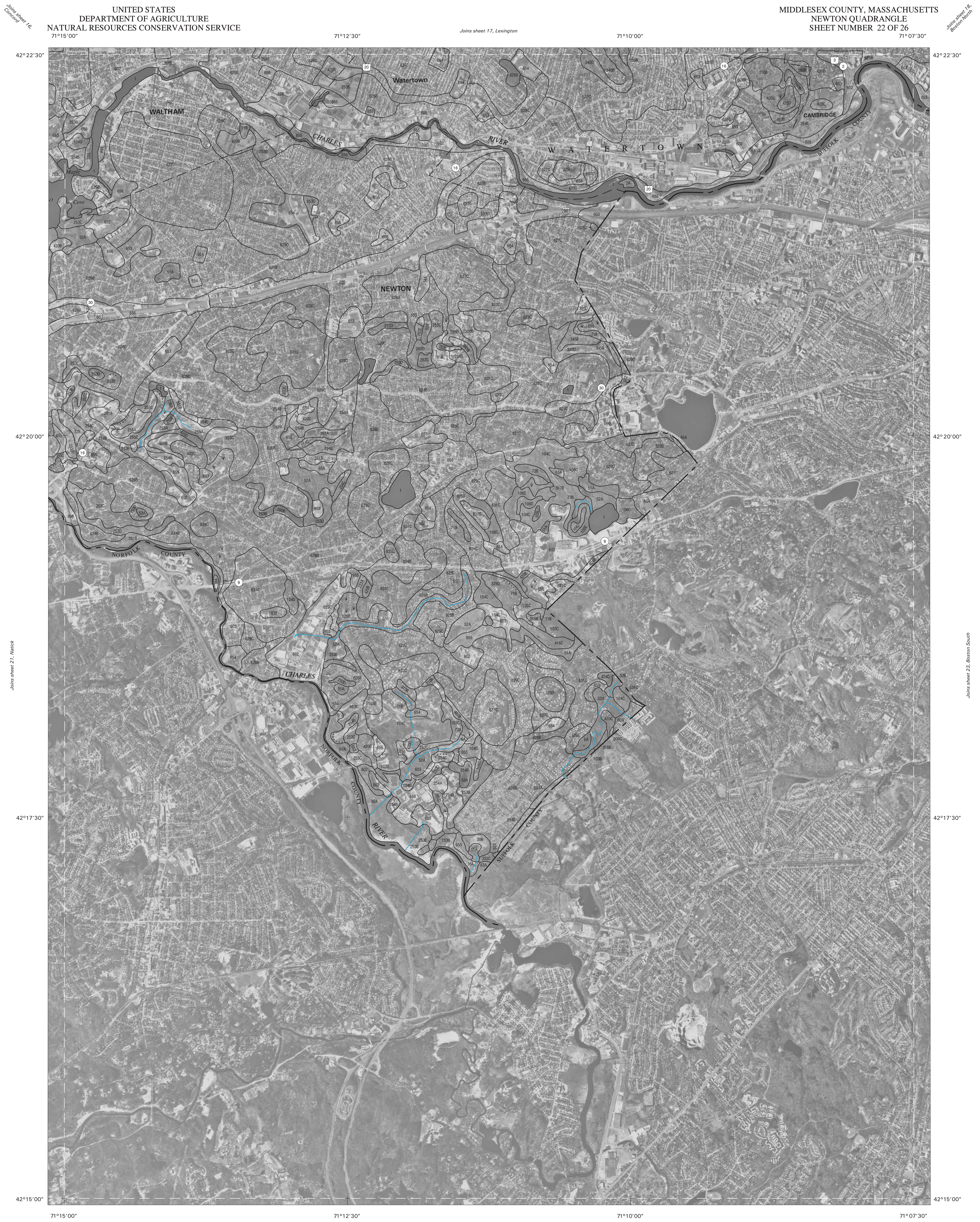
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
NEWTON QUADRANGLE
SHEET NUMBER 22 OF 26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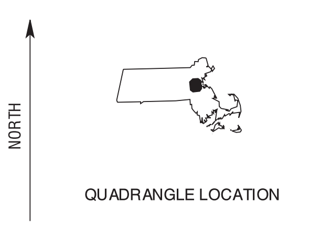
42°15′00″
WALTHAM
Watertown
WATERTOWN
CHARLES
RIVER
CAMBRIDGE
SUFFOLK COUNTY
NEWTON
NORFOLK COUNTY
CHARLES
NORFOLK COUNTY
RIVER
SUFFOLK COUNTY
Joins sheet 21, Natick
Joins sheet 23, Boston South
Joins sheet 26, Medfield

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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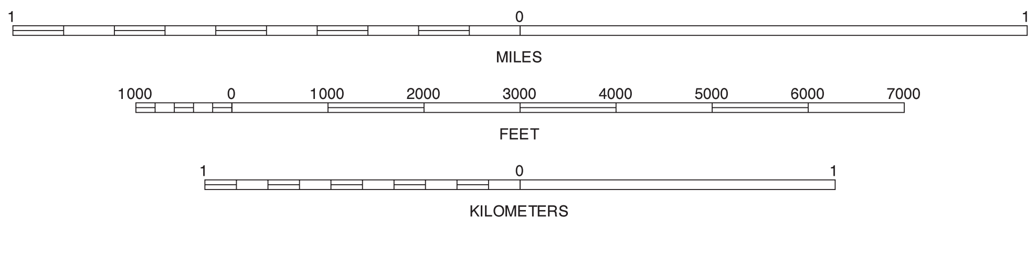
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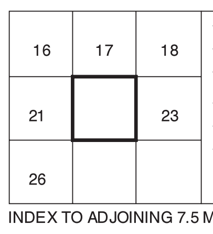
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23
26

16 CONCORD
17 LEXINGTON
18 BOSTON NORTH
21 NATICK
23 BOSTON SOUTH
26 MEDFIELD

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NEWTON, MASSACHUSETTS

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
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MIDDLESEX COUNTY, MASSACHUSETTS
BOSTON SOUTH QUADRANGLE
SHEET NUMBER 23 OF 26

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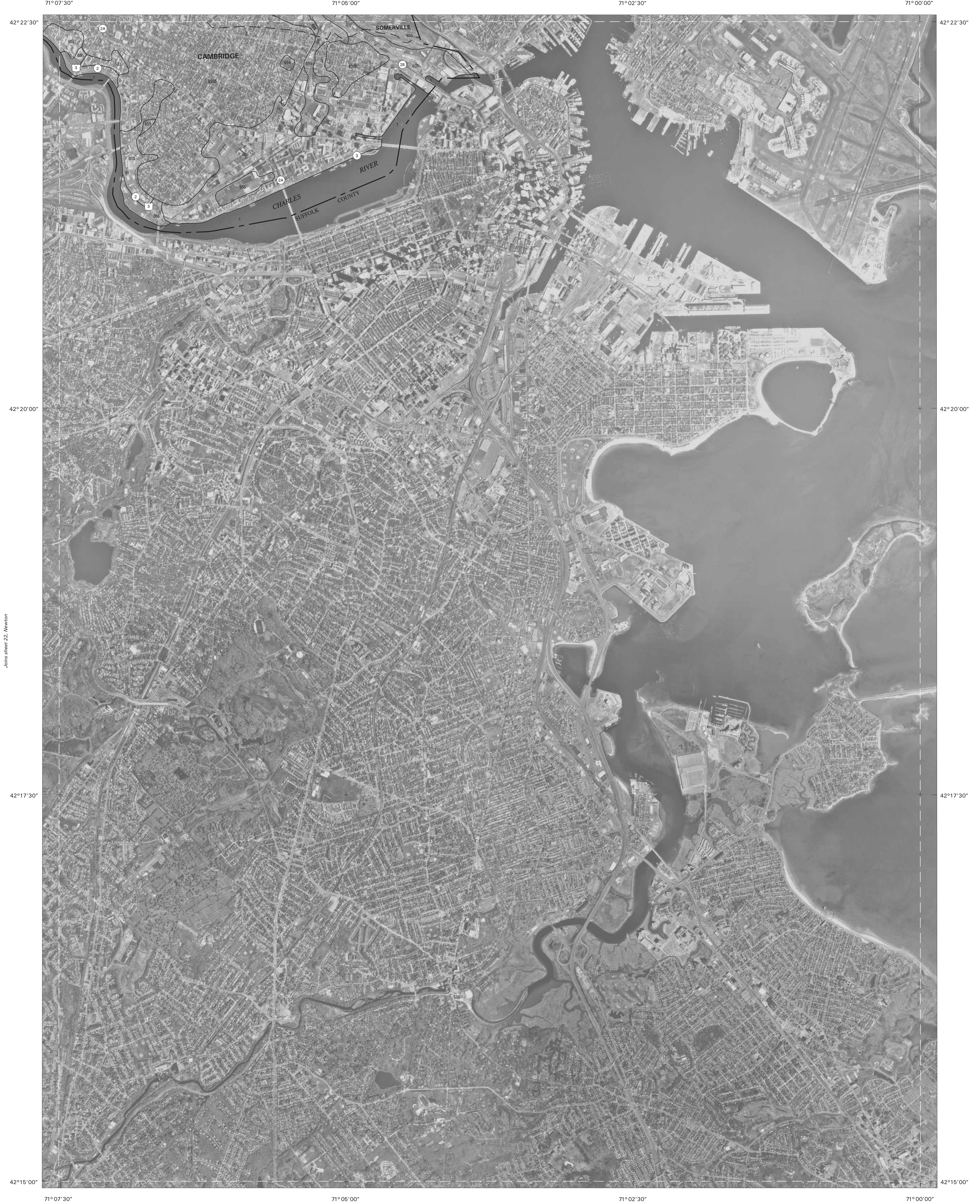
Joins sheet 18, Boston North

Joins sheet 22, Newton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603
655
CAMBRIDGE
3
2
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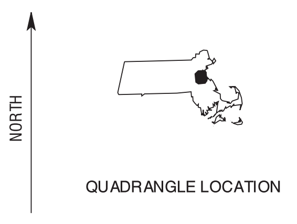
626B
654
603
SOMERVILLE
655
28
655
603
CHARLES
RIVER
SUFFOLK
COUNTY

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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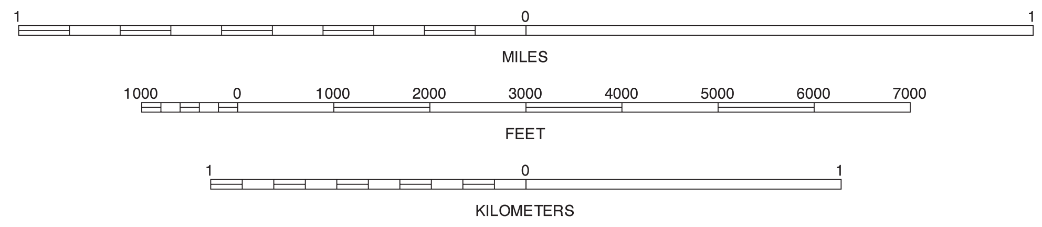
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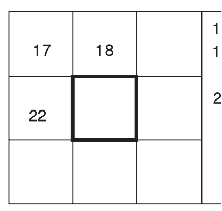

17 LEXINGTON
18 BOSTON NORTH
22 NEWTON

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BOSTON SOUTH, MASSACHUSETTS

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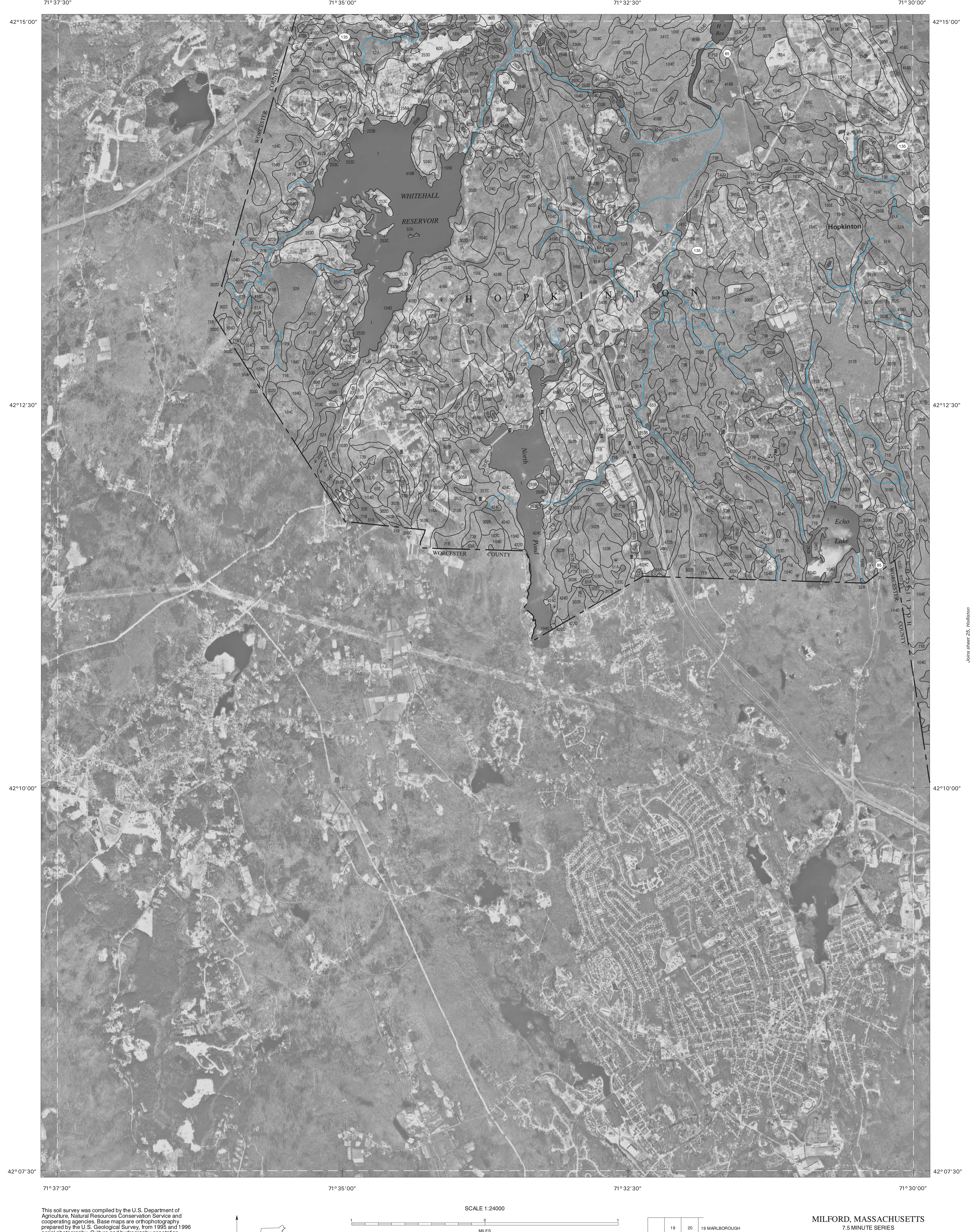
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
MILFORD QUADRANGLE
SHEET NUMBER 24 OF 26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Joins sheet 25, Holliston
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71° 30′00″
42°15′00″
42°12′30″
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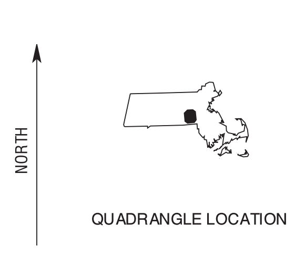
42° 07′30″
WORCESTER COUNTY
WHITEHALL RESERVOIR
H O P K I N T O N
Hopkinton
North Pond
Echo Lake
MIDDLESEX COUNTY
135
85

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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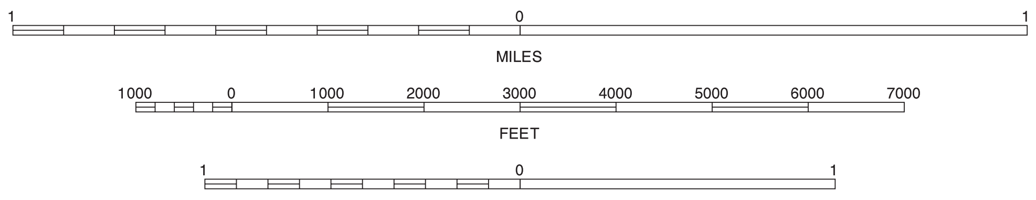
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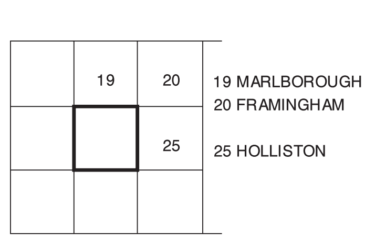
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20
25
19 MARLBOROUGH
20 FRAMINGHAM
25 HOLLISTON

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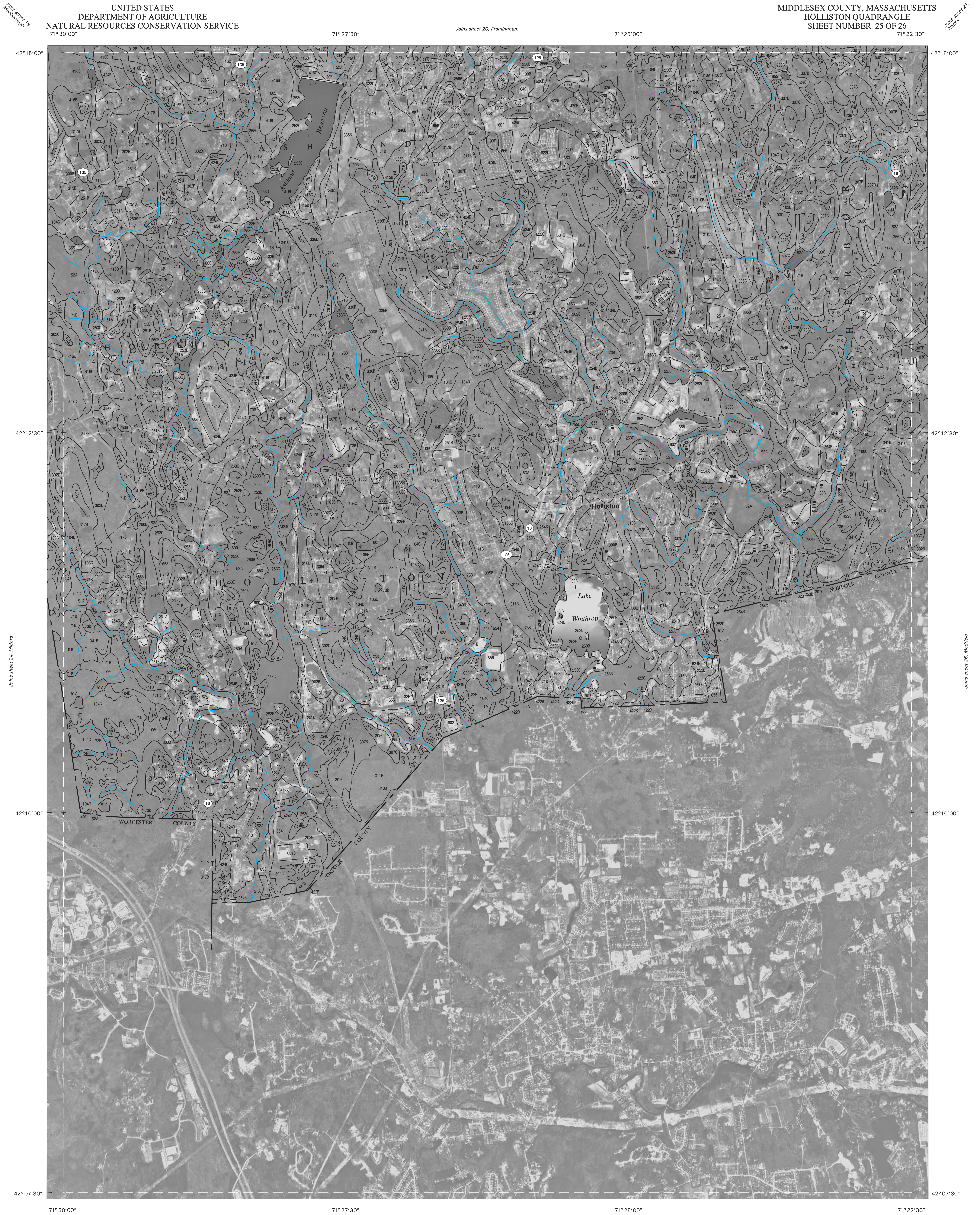
MILFORD, MASSACHUSETTS

7.5 MINUTE SERIES
SHEET NUMBER 24 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
HOLLISTON QUADRANGLE
SHEET NUMBER 25 OF 26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Joins sheet 21, Natick
Joins sheet 24, Milford
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71° 22′30″
42°15′00″
42°12′30″
42°10′00″
42°07′30″
ASHLAND
Ashland Reservoir
HOPKINTON
HOLLISTON
SHERBORN
Holliston
Lake Winthrop
WORCESTER COUNTY
NORFOLK COUNTY
135
126
16

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.

QUADRANGLE LOCATION

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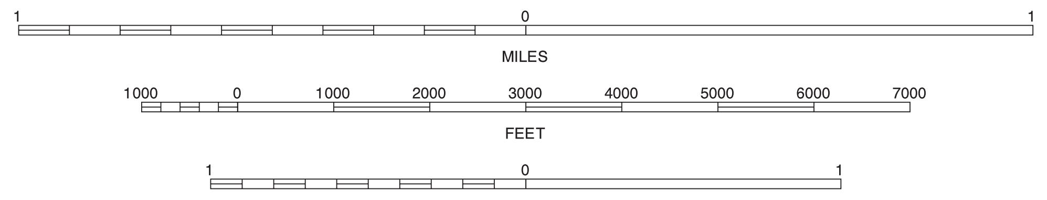
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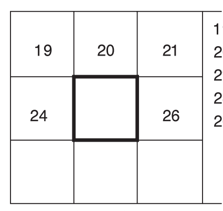
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19 MARLBOROUGH
20 FRAMINGHAM
21 NATICK
24 MILFORD
26 MEDFIELD

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HOLLISTON, MASSACHUSETTS
7.5 MINUTE SERIES
SHEET NUMBER 25 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

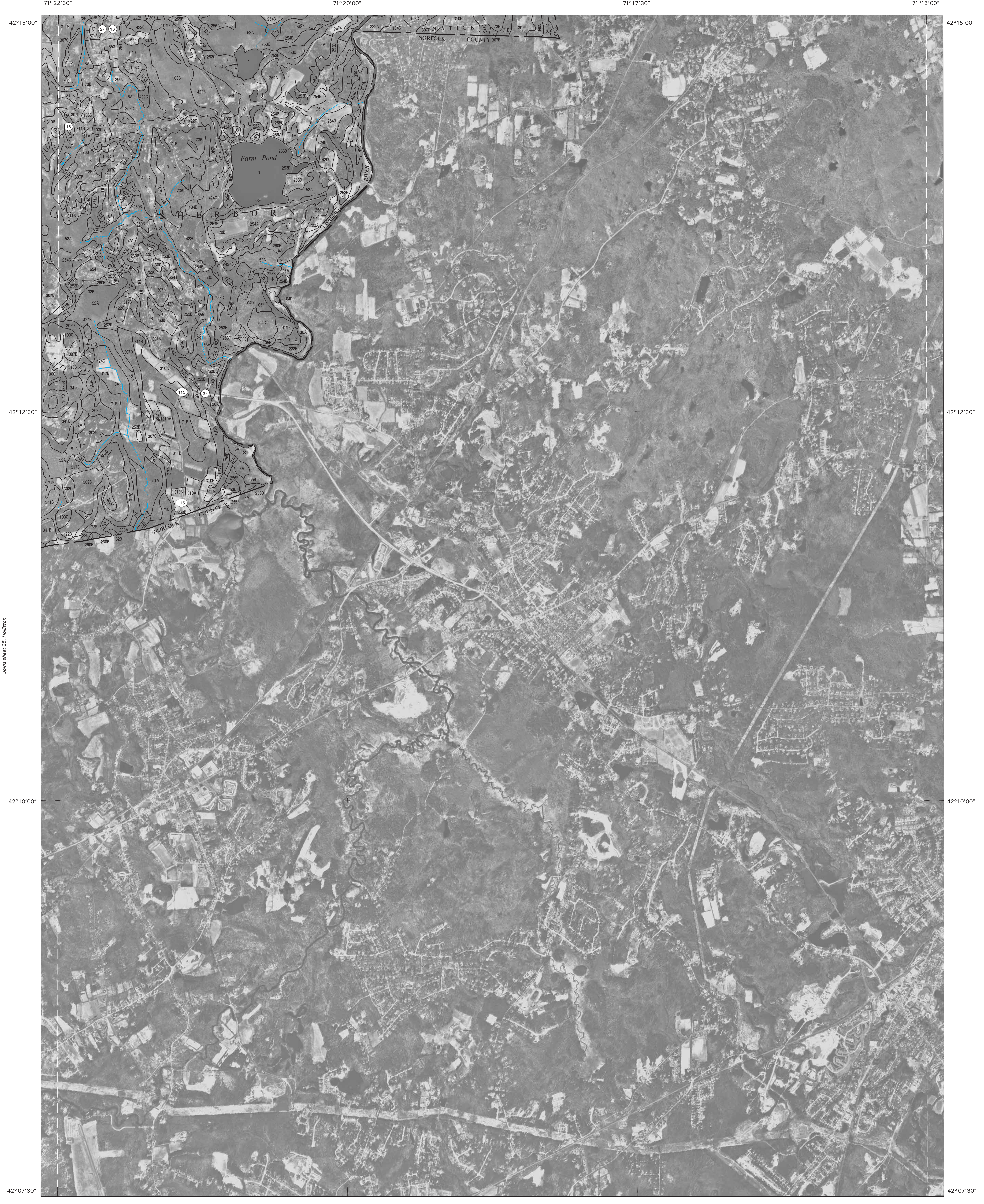
Joins sheet 20, Framingham

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MIDDLESEX COUNTY, MASSACHUSETTS
MEDFIELD QUADRANGLE
SHEET NUMBER 26 OF 26

Joins sheet 22, Newton

Joins sheet 21, Natick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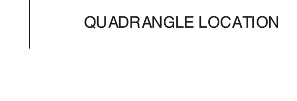
Farm Pond
SHERBORN
NATICK
NORFOLK
COUNTY
CHARLES
RIVER
16
27
115

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotography prepared by the U.S. Geological Survey, from 1995 and 1996 aerial photography. Culture and hydrography annotation were acquired from the U.S. Geological Survey. The hydrography layer was developed as part of the soil mapping effort by field soil scientists and approximates the features represented on the publication orthophotography. North American Datum of 1983 (NAD83). GRS80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 19. Coordinate grid ticks and land division data, if shown, are approximately positioned.



QUADRANGLE LOCATION

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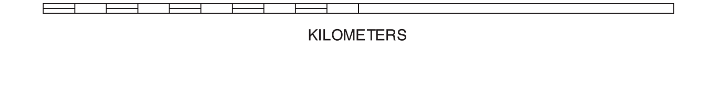
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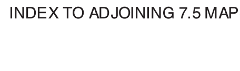

20 FRAMINGHAM
21 NATICK
22 NEWTON
25 HOLLISTON

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MEDFIELD, MASSACHUSETTS

7.5 MINUTE SERIES
SHEET NUMBER 26 OF 26

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.